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American Railroad Journal.

PUBLISHED BY J. H. SCHULTZ & CO., No. 9 SPRUCE ST.

Saturday, March 11, 1854.

Railroad Legislation in Pennsylvania, and its Results.

We are happy to express our belief, that the "difficulties at Erie," are substantially settled. Negotiations may be carried on for some time to come, but the final result, a 4. 10 gauge for the roads entering that town from the East and West, we consider certain. We also believe it equally certain, that the two roads, will, in the end, be allowed to connect, so as to form one line, leaving transshipments to be made at such points as will best suit the convenience of the forwarder.

While we are exceedingly gratified at this result, and are desirous of getting away from, and of forgetting, this ugly controversy, we are unwilling to lose so favorable an opportunity, before public attention, which has been thoroughly aroused, shall sink into its old channels of indifference, to say a word or two upon the railroad policy of Pennsylvania, as illustrated, for several years past, by the action of its legislation and the progress of its railroads.

We may commence by asking, why it is, that the market value of the securities of the municipal corporations of this State, (which have been created for the construction of railroads,) are so much below those of New York? Philadelphia 6's are not up to par, while those of the city of New York command a premium of 14 or 15 per cent. Pittsburgh 6's may be quoted at from 82½ to 85, while those of Buffalo and Albany are at a premium of 2 or 3 per cent. Pittsburgh is a much larger city than either Buffalo or Albany. Its valuation is greater. Its credit is as untarnished. Its ability and disposition to meet all its liabilities is as unquestioned. In comparing them together, it would be difficult to say, as far as their intrinsic value is concerned, why the securities of the one should be preferred to the other. Why is it then, that there is a difference of some 15 or 20 per cent in their market value?

We think the answer is to be found in the difference of the principles which lie at the foundation of the legislation, and particularly the railway legislation, of the two States in which the above cities are situated. In New York, the construction of railroads is entirely free to any person who will undertake them. The State has ignored all connection with them, and has practically acknowledged herself to be incapable of directing either their mode of construction, management, routes, business arrangements, or connections. She treats these enterprises precisely as she does all other industrial interests; simply protects them from, and prevents their doing, injury to, others. The roads that are built, simply reflect the wants of the parties to be accommodated by them. The State does not pretend to decide what these wants are, nor how they shall be met. Railroad enterprises in New York, therefore, are in harmony with all other interests. They are legitimate transactions, and there is an additional credit attached to them for this reason alone. As they are regarded with favor from the principle of the thing, the law is construed favorably toward them in all cases, where their rights are involved. An omission to comply with the provisions of the law, or a misconception of the powers granted, is never, in this State, punished by a forfeiture of privileges or franchises. All such lapses are allowed to be corrected as readily as were the companies originally

allowed to be formed. The purchaser of their securities, therefore, knows that he has nothing to fear from legal quibbles; that his securities can be rendered worthless, only by the want of business for the road. The consequence is, that the market value of the stocks and bonds of railroads in this State, are as much greater than those of Pennsylvania, (the real value of which may be the same,) as there is between the municipal bonds of the two States.

We find, on the other hand, that an entirely different policy lies at the foundation of the railway legislation of Pennsylvania. In that State, legislation has not been an expression of the popular wants, but of local or sectional interests. It has been shaped in accordance with a policy, the object of which, to make commerce subserve the advantage of particular interests or sections, instead of leaving it free to move in just such direction as convenience demands. The merits of a particular project, are not so much regarded, as the fact, whether it will interfere with the policy which the State has marked out for herself. This policy, of course, proscribed certain lines, which were eminently demanded by the public convenience.

The history of the legislation of the State, as a necessary consequence, has been one of oppression on the part of the legislature, and of manoeuvring and log-rolling on the part of proscribed interests; the object of which, was to get by stealth, what would have been denied to an open request. In this manner a large number of railroad charters have been smuggled through the legislature, concealed under very harmless exterior. It was the policy described, that led to the system of omnibus legislation, as it is termed, which is peculiar to Pennsylvania; that of grouping a large number of matters, of entirely different character, in one bill. For instance: a bill is reported by a committee, who may entertain views different from those of the majority, "for the preservation of Pickersel in Smith's Pond, and for other objects." At a lucky moment the bill is called up, is smuggled through without discussion, and consequently becomes a law, without its contents being known to a dozen persons. The bill when unfolded, is found to have a much greater scope than the protection of the aforesaid "Pickersel." The second section, perhaps

authorizes the building a bridge over the Susquehanna; the *third*, divorces a refractory wife from her husband; the *fourth*, exempts a certain person from military duty, in consequence of a sprain of his ankle; the *fifth*—*charter a railroad company*; the *sixth*, corrects the records of a municipal corporation; etc., etc. In this manner has the State been covered with a batch of bastard charters, apparently legal on their face, but tainted with suspicion from the manner in which they were got. The *majority*, feeling itself overreached and defrauded, have thrown every obstacle in the way of the use of such charter, and have pretty effectually accomplished their object; so that, although there are charters in the State covering thousands of miles of line that should be built, there has hardly been one of the class named, that has been turned to any account.

Such are contests which for years past have embarrassed the action of the legislature, paralyzed the efforts of the people, and to a certain extent discredited the securities of this State. In no other manner can we account for her want of progress in the construction of railroads. In natural resources, Pennsylvania is the first State in the Union. She is second to none in position. She is *only* second in wealth and population. She has long held this rank. Yet she is the *fourth*, and will soon be the *sixth*, in the extent of her railroads. Even the State of Indiana with only about $\frac{2}{3}$ d the area, with a history extending back only a quarter of a century, has in the extent of her railroads, outstripped the Key Stone State. And why? Because she has thrown wide open the door to railroad competition, and has invited to herself, by the most liberal charters, every man who had a dollar to invest. In this way has she enfranchized her people from the thralldom which has been such an incubus upon the energies of Pennsylvania. Freedom of action has not only imparted confidence, but it has pointed out the way to success. The construction of a road of a hundred miles in extent, is regarded as mere pastime in Indiana, which has little accumulated capital, nor hardly a town of over 10,000 people. *Every mile of railroad in that State has been built during the period in which the Sunbury and Erie Railroad has been a prominent project in Pennsylvania*, and we may say, a favorite project of Philadelphia, a city of more than a half a million of people! Yet upon this this road, acknowledged by all its friends to be of paramount importance, hardly the first blow has been struck; and it is admitted, that without the aid of this city in her corporate capacity, it will be impossible to raise the means for the work. Indiana on the other hand, has constructed *all* her railroads without any considerable assistance from municipal bodies, and needs no no such aid for any road demanded by the public convenience.

Had Pennsylvania ten years ago adopted a law similar to the New York *General Railroad Law*, we have no doubt she would have had an equal extent of railroads as the latter State. The privilege of building railroads in whatever direction and manner they chose, would have turned universal attention to the subject. The people would have at once commenced the process of self-education, in the construction of the works, and would have soon acquired a confidence in their ability to surmount every obstacle in the way of

their plans, no matter how formidable. The study of the subject would have taught them the value of railroads, and would have secured concert and co-operation of action, the want of which has been one of the great reasons why Pennsylvania has accomplished so little compared with other States. Her legislation has not only paralyzed the energies of her citizens, but has tended to keep foreign capital out of the State. Parties from abroad, unwilling to take up with such charters as they could get, and unable to obtain such as they wanted, would do nothing. The people at home, hampered and distracted by partisan legislation have attempted and accomplished little. The result is that Pennsylvania has but half the number of miles of railroad that she would have had, with the liberal policy of New York; and the market value of such as she has and of the securities issued in their account, are very far below those of a similar character, and of equal intrinsic merit, in other States.

In reference to the general facts above stated there is no controversy. Are we not correct in our explanation of them? Is not Pennsylvania a giant that has shorn herself of the strength? Can she grow strong so long as she lies fast bound in the meshes of a mistaken policy? Is not freedom what she wants? Is it not her policy to invite capital into the State instead of repelling it? The lesson that she needs first to learn is, that the most direct way to accomplish the very objects she has in view, is to allow the most perfect freedom of personal action, and that the greatest good of the individual, is always in harmony with the greatest good of the State.

New York Central Railroad.

The following is a comparative statement of receipts from passengers and freight on the New York Central Railroad, for six months, commencing Aug. 1, 1852 and 1853:

	Passengers.	Freight.	Total.	Increase.
1853. Aug.	\$349,125	\$140,000	\$489,125	
1852. Aug.	294,510	79,575	374,075	\$115,040
1853. Sept.	371,322	200,000	571,322	
1852. Sept.	340,916	97,758	438,674	132,648
1853. Oct.	326,706	223,500	550,206	
1852. Oct.	300,649	115,891	416,541	133,665
1853. Nov.	242,327	215,893	458,221	
1852. Nov.	209,775	152,114	361,889	96,332
1853. Dec.	190,014	230,010	420,025	
1852. Dec.	160,657	197,059	357,717	62,308
1854. Jan.	160,790	167,356	328,247	
1853. Jan.	126,767	185,599	312,367	15,880

Total increase	\$555,882
Total receipts New York Central Railroad for six months ending 1st February, 1854.....	\$2,817,147 87
Total increase for six months.....	555,882 08
Average increase per month.....	92,647 01

Cleveland and New York City Railroad.

The above Company have been organized by the choice of the following persons directors: E. G. Williams, H. W. Clark, J. A. Morely, Cleveland; Uri Seely, R. Hitchcock, Painesville; W. W. Branch, Madison; Frederick Carlisle, Ashtabula. The Directors elected Ellery G. Williams, of Cleveland, as President, and W. H. Stanley, Secretary and Treasurer. The total amount of stock subscribed is \$417,000. It is proposed to build this road with a six foot track from Cleveland to Erie, which will there connect with a road of like gauge, intersecting the New York and Erie Railroad, making a continuous track of equal gauge to New York City. Its western connection will be with the proposed road to Cincinnati and St. Louis, and roads terminating in Ohio City.

Journal of Railroad Law.

SUBSCRIPTIONS TO RAILROAD STOCK BY MUNICIPAL BODIES.

In our issue of September 17th, 1853, we published the decision of the Supreme Court of Pennsylvania which asserted the constitutionality of such subscriptions when sanctioned by legislative authority, two judges of that Court, however, dissenting from their brethren.

A corresponding decision has since been rendered by Hon. A. W. Graham, Judge of the Warren Circuit Court of Kentucky in the case of *Smith and others against the Louisiana and Nashville Railroad Company and others*. In 1849, this Railroad Company, together with others, was chartered and certain County Courts including that of Warren were authorized to subscribe for stock in said roads and to submit the question of the propriety of their so doing to the popular vote of the County. A vote was accordingly taken in respect to subscribing \$150,000 to the Bowling Green and Tennessee line road and the like sum to the Louisville and Bowling Green road, and it resulted favorable to the measure proposed. The subscriptions were in each case made, and a levy of a half of one per cent. on taxable property in Warren County declared, in consequence. The two Companies owning the said roads were then amalgamated, and the County Court proceeded to issue bonds with coupons attached, for the purpose of carrying out their undertaking. A tax of a fourth of one per cent., having then been ordered to be collected for the payment of interest, the plaintiff applied for an injunction against any further proceedings, on the part of the consolidated Railroad Company, the Sheriff and the Warren County Court.

The most important question argued at the hearing was whether the charters of the Railroad Companies above mentioned were constitutional.

The Judge decided this question in the affirmative, and in delivering his opinion in relation to this subject he substantially said that in Kentucky no railroad of any extent can be built without the aid of City and County subscriptions, yet the Constitution must be implicitly obeyed. In order to investigate this subject properly it is necessary to examine the adjudications of the Kentucky Courts upon the question presented before the meeting of the Convention for making the existing State Constitution. More than 20 years ago in the case of *O'Hara against the Lexington and Ohio Railroad Company*, Dana 233. the Court said "the commonwealth had a right to construct a railroad. It had the right to delegate this power to individuals." The same principle was asserted in the *City of Louisville against Hyatt* 9. Dana 516. "The Legislature may authorize a majority of the owners of property on a square in a city to decide that certain improvements shall be made at the expense of the lot-holders. In *Cheeny vs. Hoosen*, 9. B. Mon. 338, the Court said: "The legislature have the power of granting charters of incorporation, and have the constitutional power to confer taxing power upon towns and other local corporations, essential to their local convenience. All lands of the commonwealth are subject to the general power of the legislature to tax them either for general purposes of government or for local purposes within localities within which they may be situated." By an act incorporating the Louisville and Frankfort

Railroad Co., the city of Louisville was authorized to subscribe stock; to levy a tax on the property of the citizens for its payment, and each tax payer was to be entitled to the stock for which he had paid. In that case (see 9. B. Mon. 529,) the Court decided the act was not unconstitutional, nor was it rendered invalid, because the benefit might not be equal in its operation. "The legislature have constitutional authority to grant to towns and cities power to tax the property of their citizens for the construction of works of internal improvement for facility of access to, and of transportation to and from the town or city." See Leigh (Virginia) reports, 120. Connecticut reports 475; and Talbot *vs.* Dent, 9. B. Mon. 535. Other cases from the Supreme Court of Kentucky and other States might be referred to, sustaining and enforcing the principles recognized and adopted in the foregoing opinion. Thus when the Convention assembled, the members well knew it to be settled law that the legislature could empower municipal bodies to subscribe to the stock of railroad companies and to lay taxes therefor. And in their new constitution, they placed no restriction upon the power of the legislature in this respect. On the contrary the records of the Convention show that when the subject was distinctly presented to their consideration they refused to impose any such restriction of legislative authority, and refused to interfere with its exercise.

Again it is argued that this charter gives to the people of the county, the power to make the law. If it be so, the Act is unconstitutional, because the constitution has vested the law-making power, exclusively in the Legislature.—But this law is not thus objectionable. The Act is mandatory in some of its provisions, and leaves a discretion in others. It commands the vote to be taken, and if the subscription is made it imperatively directs all the subsequent proceedings. It submits to the voters of Warren and other counties who are chiefly interested and are to bear the burdens if assumed whether the subscription shall be made, and the law thus fully executed. It is not the vote which makes or alters the law, it is the law that directs the vote and prescribes every thing to be done consequent upon it. The law is perfect, final and decisive in all its parts, and the discretion given only relates to its execution.—It may be employed or not employed—if employed it rules throughout. If not employed it still remains the law, ready to be applied whenever the preliminary condition is performed,—21 Ohio Reports 86.

But the most prominent objection taken is that the Act violates that provision of the constitution which forbids the taking of any man's property for public use, without consent of his representatives and without just compensation previously made to him. If this clause of the constitution ought to receive the construction which has been given to it in the argument, no County Court could build bridges, improve the county roads, or even build court houses or jails; and yet it was admitted that by legislative enactment they had, and might well exercise such power. "How can that construction be correct which will authorize acts to be done for making one kind of public improvement and at the same time prohibit the like acts for making another kind; which will authorize a highway and prohibit a railroad?" Maine Reports, 34. vol. This railroad is surely not more private

in its character than is a grist mill, owned by a single individual, who derives all the profits; and yet the County Courts have ever had the power to compel the people to contribute their time and labor to open and keep in repair roads leading to the mill. Although the one is much more extensive and costly than the other, the principle of public good which justifies the one may well sanction the other.

But this Act does not take from any man his property; it does not divest him of his title, or in any manner effect it. It may be, that the taxation which a large majority of the people of Warren have by their vote imposed on themselves as well as on the minority may, in some instances, be oppressive; if it shall so turn out, it is to be regretted. On this subject the patriotic language of that very able and distinguished jurist, Judge Bibb, when delivering the opinion of the Court of Appeals in *Beard vs. Smith* 6. Monroe. 499. is in point. The design and good of civil society necessarily require that the natural and acquired rights of each member should admit of limitation several ways, and to a certain extent by authority of Government. It is better ever for men that the State in general flourish, though they themselves do not thrive in it, than that they should flourish in their private affairs and the public suffer. For let a man's private affairs be never so prosperous, yet if his country be lost, he must perish with it. That which is the preservation of States is the care of the public good, and that which destroys them is the minding only one's private advantage; therefore it concerns both the State and private men to prefer the interest of the public to that of particular persons." (A doctrine worthy of attention at Erie).

The Judge concluded by saying that he had intended to quote the decisions of the Court of Appeals of Kentucky, in the case of the Justices of Clark against the Paris &c., Turnpike Company. (11. B. Mon. 150,) and that of Slack and others against Lexington & Maysville Railroad Company, (13. B. Mon. 2,) but must refrain, because he had already protracted this opinion much more than he expected to do. No one who has read them will hesitate to say that they fully sustain the positions taken. He further remarked that the Supreme Courts of the States of Ohio, Tennessee, Maine, Virginia, Pennsylvania, Connecticut, New York, Louisiana, and other States with constitutions much like that of Kentucky, have fully and clearly sustained the constitutionality of Acts of their respective Legislatures very similar to the charters under consideration.

The injunction was accordingly refused.
COMMON CARRIERS, A RULE OF EVIDENCE CONCERNING.

In the case of *Berly vs. Newton* brought in our Supreme Court for injury to certain trunks containing merchandize, belonging to plaintiff, incurred while they were in the course of transportation upon defendant's steamer, evidence was admitted on the part of the plaintiff tending to show that it was the usage of the defendant always to charge freight on trunks such as those in which the plaintiff's merchandize above mentioned was carried. On a motion for a new trial the Judge held this evidence to have been rightly admitted. For it was necessary for plaintiff to show that the defendant knew or had due notice of the contents

of the trunks, and the evidence in question showed that from the size and form of trunks like plaintiff's the defendants usually inferred that they contained merchandize and disposed of them on board of their boats, accordingly.

Working of Railroads.

With each successive stage of completion attained by the railroad system of our country, an additional importance is given to operation and management. The time will come when our railroads will be all in operation, and no more will be built. The railroad system of a large part of the country is already completed, while a large amount of railroad work now in progress is advancing with extraordinary rapidity. The constructing talent employed on railroads, is transferred, upon their completion, to new works, leaving the duty of management chiefly in the hands of mercantile, rather than professional men. How far the speculative or temporary expedients of the one class should be influenced by the obvious tendencies of the other, may not be difficult to determine. Railroads will doubtless pay better in the hands of purely mercantile men, where a different quality of talent has established the system of operation, but even in operating, there may be an advantageous infusion of skill, such as goes beyond figuring up the gains, or economising in obvious expenditures.

There are two ways, most essentially different, of managing railroads profitably. The one which is generally soonest adopted is that of "curtailing" obvious expenses in the closest manner, and in demanding the highest remuneration for the movement of persons and property. The other system does not reject the principles contained in either of these expedients, but adopts them to such an extent as must be inevitable from other circumstances; and in the meantime takes advantage of every improvement in construction and operation, in adaptation and in encouragement to business. The one assumes that the science of railway economy is established, and that all that is wanted is to keep the screws tight. The other perceives and admits improvements, in which word is comprised the sources of all the superior facilities possessed in present times.

The stringent system which aims to save all and get all, is severely tested, however, when touched by the influence of competition. When it is assailed by a stern demand for lower charges, or a withdrawal of business, it bustles about, endeavoring to show that such and such business, "cannot be done" under a certain cost. In other words, it can only show that in some situations, such cost has been incurred, and cannot state whether necessarily or not.

We believe that the science of management is the most important in its bearings upon the success of American Railroads: that it includes facts and principles which are deserving of a full statement and of elaborate discussion. Everything which cheapens communications promotes general prosperity in numberless ways. The access to distant markets; the increase of social and mercantile acquaintance, and of the new relations which spring from them; the spread of intelligence; all of which results are exhibited in the unexampled growth of our own country, are all due to the adoption of those mechanical expedients

which have reduced the resistance, and thereby the cost of locomotion.

In this field the *Journal* will ever strive to be a faithful laborer. There is yet necessity for a vast deal of information touching the subject involved. The construction, working, wear and renewal of every member of the railroad system must yet be discussed and illustrated. We shall be prepared to show in a short time that the assumption of the perfection of the railway system has operated most disadvantageously upon the interests of those who, by their adoption of a corresponding system, have shown their faith in such perfection; in other words, the respectable conservatives who control such roads as, with favorable routes can scarcely maintain their local business, and nearly all of which have zealously refused all advances of progress. It can be shown that this charge of uphill conservation is not the result of wild reasoning, but that it is borne out by facts.

In these discussions we shall expect to be supplied with the necessary materials. Physical facts developed in the construction or working of railroads and of their machinery will be always thankfully received, and we are confident that there is enough of such information in existence and that it only requires to be brought out. Every engineer, superintendent, master of machinery, locomotive and car builder has more or less of the materials necessary to the purposes of discussion.

Railway Signals.

A recent number of a foreign scientific journal gives illustrations and descriptions of an improved railway signal, which by its simplicity and the certainty of its indications, deserves to be widely adopted in our own country. Indeed upon the most careful inspection it will be seen fully to merit the preference which we have given it.

Fig. 1.



Fig. 2.

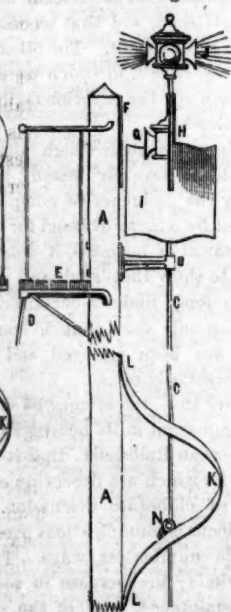


Fig. 1 is a front elevation of a signal of the improved kind, as arranged in its primary position, presenting a plain white disc to the view of the engine-driver, indicating that the line is clear, and therefore that the train may safely proceed. Fig.

2 is a corresponding side view of the signal at right angles to fig. 1. Fig. 3 is a detached front view of the actual signal portion alone, representing the indicating apparatus in its second position, to show that a passing train must proceed with caution, a square green disc being displayed for the purpose. Fig. 4 is a similar detached view of the disc-signalling details, wherein two distinct red discs are exhibited, to indicate danger.

The signal consists of a stout wooden pillar, *A*, carrying horizontal side brackets, *B*, in which brackets are plain eyes, to receive the parallel vertical iron rod, *C*. This main post, *A*, is fitted with a ladder, *D*, and platform, *E*, in the usual way, for the ascent of the signalman; and its inner front face carries a stationary circular disc, *F*, with a red face, pointing in the reverse direction to the train's motion. The adjusting rod, *C*, is passed freely through its plain eyes in the brackets, *B*, having liberty both to rotate and traverse longitudinally therein, a collar being on the lower end of the rod, to prevent it from traversing too high at any time. This rod is surmounted by a circular signal disc, *H*, coloured white on one side, as shown in fig. 1, and red on the other, as in fig. 4. Be-

Fig. 3.



Fig. 4.



neath this side, the rod also carries a second disc, *I*, of a square or rectangular shape, and checked or half-entered into the upper disc, *H*, forming one piece with it. These details, with the ordinary lamp, *J*, on the apex of the rod, *C*, form the entire signalling apparatus. The front face of the timber post, *A*, has also bolted to it, lower down, a spiral guidepiece, or incline, *K*, held at its two ends, *L*, in a fixed position. This spiral piece embraces the rod, *C*; and an adjustable arm, *M*, standing out at right angles from the rod, carries a small pulley, *N*, upon its outer end, bearing upon the edge of the incline as a support, a small handle, *O*, being fitted up with a catch, as shown in dotted lines, for adjustment. Or, when the signal is to be actuated from a distance, by cords or ropes, in the usual way, the common signal wire-ropes are passed round a pulley, keyed on near the lower end of the rod, *A*. An additional lamp, *Q*, may be attached to the red face of the upper disc, *H*, as a security against danger, arising from colour blindness, or an inability fairly to distinguish different colours. When the signal is in its first position, as delineated in figs. 1, 2, and 3, the circular disc, having its white face towards the approaching train, completely covers or conceals the fixed red disc, *F*, on the wooden pillar, from view; whilst the green disc, *I*, being turned with its edge towards the coming train, is also invisible. Under these circumstances, then, the engine-driver, seeing only the white face, or a single round disc, knows that the line is clear for his journey. But if, from any cause, "caution" is to be signalled, the signalman, either by his wire-rope and pulley, or the adjusting handle, *O*, turns the rod, *C*, one quarter round upon its axis. Then, as the arm, *M*, is fast on the rod, *C*, it goes round with it; and in the traverse of the pulley, *N*, over the incline, *K*, the rod, *C*, is caused to rise up

through its bracket bearings, so as to bring the signal discs into their second position, as represented in fig. 3. The circular red and white faced disc is now turned with its edge towards the train, and is therefore invisible; whilst the rectangular green disc, *I*, faces the train, and covers up or conceals the fixed red disc, *F*, entirely from the driver's view; so that, as the look-out on the train sees only the green disc, he at once knows that he must run slowly and with care. If "danger" is to be signalled, for the purpose of stopping the train, the signalman turns the rod, *C*, another quarter around, the resulting traverse of the arm, *M*, over the spiral guide, *K*, carries the rod still further upwards in its bearings, bringing the signal discs into their third position, fig. 4. The circular disc, *H*, having thus been turned a full half round, now presents its red face towards the train; and its increased elevation, due to the spiral guide action, having brought it to a higher level than that of the stationary disc, *F*, the engine-driver now sees two separate red-faced discs of circular shape, forming a very striking "stop" signal. On reversing the action of the rod, *C*, the discs are obviously brought back into their normal position, as in figs. 1, 2, and 3.

For night-work, the lamp-signals will act in this manner:—In the first position, the lamp, *J*, on the top of the rod, *C*, will give a white light, indicating "all clear;" whilst the lower, or secondary lamp, *Q*, is screened by the circular disc, *H*. In the second position, when the rod, *C*, is turned one-fourth round, the upper lamp, *J*, has a new branch brought forward to throw out a green light, indicating "caution," the secondary lamp, *Q*, being still shaded. In the third position, the third branch of the compound lamp, *J*, will give out a red light, whilst the single secondary lamp, *Q*, is now brought to bear, and gives a similar red light, both in the direction of the approaching train. In this case, should the look-out be effected with colour blindness, he will yet be put on his guard by the appearance of two distinct lights, indicating danger.

Survey for the Pacific Railroad.

The Secretary of the Treasury has sent to the Senate a document containing the reports of the different parties who have been in the field the past season, making surveys and explorations of the proposed routes for a railroad to the Pacific.

The following is a summary of the report made by Governor Stevens, of the Northern route:

Accompanying Governor Stevens report, is a map sketch on a scale of 1-600000 of the route of the proposed road from St. Paul to the Shavonne river, and Governor Stevens is "confident no grade will be found of more than twenty feet per mile," and "cost without equipment will not exceed \$20,000 per mile."

Another map sketch is given on a scale of 1-1200000, from St. Paul to Fort Union. He says the "enclosed sketch of a railroad route is certainly practicable at a cost not probably exceeding \$40,000 per mile. * * The great key points of the country are the valley of the Moose river, and the region of the Bois de Sioux." No grade is mentioned, nor profiles given, of any portion of the route.

West of Fort Union no sketches of the country have been received. The rivers along the route are reported as being very much out of place on the maps, and indeed it is impossible to trace the route definitely upon ordinary maps. No astronomical positions are given.

The nature and substance of the results obtained west of Fort Union, so far as reported are as follows:

At Fort Benton.—Governor Stevens says, "up to this point we have found the country entirely practicable. Whichever pass in the mountains is

decided upon, the Milk River Valley will furnish a good approach."

At St. Mary's Valley.—He reports that two approaches to Cadot's pass were examined, both requiring a tunnel, "not exceeding a mile in length," and a grade that will not "probably exceed forty or forty-five feet per mile."

To the West, "the descent down the Hell-gate River was mostly through an open valley, till the Hell-gate passage is reached, where the river winds in a narrow defile, requiring for a railroad expensive sustaining walls and embankments, and probably some small tunnels to avoid short curves." "It can be turned by tunnelling a marble mountain to the south of it, or by crossing over from a tributary of the Hell-gate in the open valley of the pass to the valley of the river Jocko, one of the principal southern tributaries of Clarke's fork." This was explored and a barometer profile taken; "in the absence of it, can only state it will probably furnish a practicable mode of avoiding the Hell-gate defile."

Cadot's Pass is reported as being "nearly 3,000 feet below the South Pass," and "a much better one, both in summer and winter." A small party examined a Pass in the Rocky Mountains south of Cadot's Pass, and was fitted out to examine the Marias Pass to the north of it.

The Bitter Root range, west of St. Mary's valley, are said to be impracticable.

At Olympia, Dec. 5.—Governor Stevens reports that a route was surveyed over the Cœur d'Eleine Mountains from St. Mary's to Fort Colville, but no barometer profile taken for want of an instrument. "It is probable" these mountains might be passed with a tunnel not exceeding "six or perhaps four miles without involving impracticable grades." Difficulties from snow "should be carefully investigated."

Lieutenant Donelson surveyed the general line of Clarke's fork. Governor Stevens says he "reports the route from the debouche of the Hell-gate Pass to the banks of the Spokane" * * * as "practicable, involving no other difficulties than are usually met with in the Atlantic States, and that it will connect well with a route through the Marias Pass, should a practicable one be ascertained. The grass is generally good, there having been a scarcity only two nights."

The Columbia was explored from Fort Colville to the forty-ninth parallel. Captain McClellan explored the Cascade range as far north as the forty-ninth parallel, and his examinations were connected with the others under Governor Stevens.

Governor Stevens refers to Captain McClellan's examinations, and "I apprehend no difficulty whatever in the Snoqual-me Pass to the passage of a railroad; and from information I have received from old residents, particularly from Mayor Goldsborough, a civil engineer who has carefully examined the country, it will be an easy matter to carry it to a good harbor on the sound."

According to Captain McClellan's report of September 18, the Snoqual-me Pass "is at the head of the main Yakima," some thirty-five miles north of Mount Reginer. The lowest point of the divide is 3,543 feet above Vancouver. The descent to the east to Lake Katchelas, a distance in a direct line of about three and one-fourth miles, is 1,129 feet; beyond this, "there is no difficulty in the construction of a road of any kind." He did not "proceed more than a few miles beyond the divide" to the West, but as far as he went, "the valley was narrow and the descent steep." He reports Nah-ches Pass as 4,966 feet above Vancouver, and not so favorable as the other. In both Passes the snow accumulates in the narrow valleys, probably 20 feet, and in the mountains, five or six feet.

Owing to the lateness of the season, the survey was to be continued to Puget Sound by the line of the Columbia and Cowlitz.

Governor Stevens does not mention any grade as the probable maximum from the summit of Cabot's Pass to Puget Sound. The extent of country adapted to cultivation, and the facilities for wood and water, are not particularly alluded

to. At the date of Governor Stevens' last communication, (December 5,) the finished drawings and estimates had not been made for any portion of the work. The explorations west of the Cascade range are not terminated. The reports of those sent to gauge the snows had not been received, nor of the party left to finish the survey of the Missouri river, nor the one to run a line from St. Mary's to Fort Hall.

REPORT OF THE SURVEY OF WALKER'S AND THE NEIGHBORING PASSES.

Depot Camp, Pose Creek, Aug. 31, 1853.

I have just returned here from a twenty day's examination of the various passes of the Sierra Nevada, and give the results so far.

I started from this point, which is eight miles North of Kern River, and went through Walker's Pass, the northernmost point on the Sierra, where it is supposed possible to carry a railroad across. Then re-ascending to the summit of the pass, I wished to follow the back bone of the mountain, southwardly, till it joined the coast range; thus necessarily seeing every depression in the ridge. Having thus ascertained the lowest points, I then intended to ascertain if they were accessible from both bases. This plan I followed most successfully, and I have now a good knowledge of these mountains—am certain that no pass exists (within the above limits) that I have not examined—and am now prepared to commence a survey of the best of them.

I regret to say that the difficulty of crossing the mountains is much greater than I anticipated; but I think there is no doubt of the practicability. I have been through eight passes, most of which are very bad, and I will briefly describe some of them. You must understand, however, that my opinions here expressed may be modified, when I get a more accurate knowledge from surveys.

With this understanding, I will commence by saying, that *Walker's Pass is out of the question*. To reach this we ascend Kern River (properly the Potom-kola) for some fifty miles, where a branch comes in from the East. This we ascend, in a wide and gently ascending valley, for some twelve miles, when we leave it, cross the divide and enter the plain or basin beyond. The difficulties are: 1st, ascending Kern River; 2d, ascending to the summit from the valley of the branch; 3d, descending to the basin.

1st. On Kern River high mountains come down abruptly on each side, forming a canon of five or 6 miles in length, impassable for mules, and probably for footmen, since there is no Indian trail through it—and these mountains cannot be turned. Hence, to go by Kern River, an immense deal of cutting, blasting, &c., would have to be done. Rock, granite. This river falls in the fifty miles—fifty feet to the mile on an average.

2d. The ascent to the summit for five miles is over 300 feet to the mile, and rugged rocky mountains on each side, cut up by precipitous ravines, prevent a winding course to gain distance.

3d. The descent from the summit to the basin is 8 miles, and over 250 feet to the mile. The altitude of Walker's Pass is over 4,500 feet above the Tulare Valley, and over 5,000 above the sea. The basin is 2,500 feet above the valley.

Proceeding south, the next pass worthy of note is one never before passed through so far as I can ascertain. The ascent from the basin is uniform, and not more than a hundred feet to the mile, arriving at the lowest point but one of the Sierra Nevada—3,100 feet above the Tulare Valley. A creek runs from the summit to the valley, but the descent for 10 miles is 300 feet to the mile. Possibly, by winding in the hills a more gradual descent could be found—still it would be difficult and very expensive. Instead of following this creek we can follow along the crest of the mountain, on nearly a level for 15 miles, and then descend nearly the whole vertical distance in 3 or 4 miles. If inclined plane, with stationary engines, have to be resorted to, this would be a good point.

Still further south there are two passes leading into the head of the Tulare Valley, at a place

called Tejon. A wagon road passes through one, which is beginning to be known as the Tejon Pass, and it is the worst wagon road I ever saw. The pass fortunately presents some good features for a railroad. Two small streams run from near the summit—one into the basin, the other into the Tejon—but their sources are separated by a narrow divide over 1,500 feet high. I have great hope that a survey will show that should this ridge be tunneled, the road can pass up one creek through the tunnel, and down the other. The summit of the Tejon Pass is 4,500 feet above the Tulare Valley.

The other pass coming into the Tejon is called the Canada De Las Uvas (grape ravine). In this a small brook descends into the Tejon, 1,400 feet in 4 miles, while the rest of the pass is of gentle ascent and descent. The summit is 3,100 feet above the Tulare Valley—the same height as that of the passes before mentioned. Two modes would naturally suggest themselves for making a road through this pass. One, a system of inclined planes with stationary engines over the 4 miles above mentioned; a second, by following along the side hills. Before I express an opinion on these points, I must wait till a survey of the pass is made. I intend to leave here to-morrow for the Tejon, 25 miles distant, and shall run a line of levels through the Tejon Pass and the Canada De Las Uvas, at the same time making an accurate sketch of the hills and ravines on each side. From the data thus obtained, I shall be able to give full information on the subject. So much for passes.

R. S. WILLIAMSON.

The little that was received from Capt. Gunnison previous to his massacre is not favorable for the route he was commissioned to explore, which was what is termed Benton's route, by way of the *Huerfano* and the *Coo-chi-to-pee* pass. The information furnished by him is altogether too meagre to be of any particular value.

The survey of the route upon the 35th parallel was entrusted to Lieut. Whipple. When last heard from, he was at the *Zuni* villages. We give his dispatch, though not very intelligibly, for want of a map of the route.

Camp No. 70, near Pueblo Zuni, Nov. 25.

Colonel: I have the honor to enclose a geological and a pencilled sketch of a general profile of our route from Fort Smith to Rio del Norte. The vertical scale of the latter not being exaggerated, the minor deflections are unappreciable. However, it may serve, like the rough topographical sketches already sent, in the charge of Senor Don Ambrosio Armijo, to guard against a total loss of our work, in case, by any accident the notes we carry should be destroyed. By examination you may perceive that no great obstacle is opposed to the construction of a railway along the route traversed by the wagons, the profile of which is given from barometric observations, taken at every point wherever occurred a change in grade. This profile, however, is intended merely as the basis for a reconnaissance upon which the profile of deflections for a better route may be projected. Several such deviations have been made, but not yet represented upon the profile: One through a level prairie south of the road and extending nearly from the Poteau to the San Bois; another passes over a slightly undulating country, from the head waters of Coal Creek to the waters of Boggy, leaving the Shawnee villages north. It is a question, also, whether the valley of the Canadian should not be kept nearly the whole way to the mouth of Tummecari creek, thus avoiding the ascent to the Llano estecado, and proceed to the Pecos, north of Anton Chico, where the canon is believed to be narrow enough to be spanned by a bridge. From Rio Pecos to the Valley of the Rio del Norte is doubtless the most expensive of the first division of our route. Still the ground is difficult only in comparison with that previously passed over. Two passes of the Rocky mountains were examined, one leading by Rio Galisteo

to the Pueblo de San Felipe, the other by Carmel pass to Puebla de Isleta. The first makes a short deflection to the North, by which a blind man would never suspect the vicinity of a range of mountains. A branch of the Galisteo is encountered about 25 miles east of the mountain range, and makes a broad open valley, with a descent, unappreciable by the eye, to Rio del Norte. The Carmel pass is more directly west, and its cannon, with some slight cutting, will afford a good route. Debouching from the mountains, a wide arroyo, with a grade of about 50 or 60 feet to the mile, leads to Isleta. At these pueblos, San Felipe and Isleta, are found the two best crossings of the Rio del Norte. At both places the diluvium drift infringes upon each side of the river, affording natural abutments for a bridge. From the latter point the survey has been continued, with a sweep to the South, to ascend the Mesa, nearly 700 feet in height, which divides Rio del Norte from Rio Puerco. Thence we ascend Rio de Gallo to near its head waters, where parts the road leading to Fort Defiance. Sending a party to reconnoitre that route, we proceeded by the Canino del Obispo to our present camp, near the Zuni. Upon the route of the survey, toward the southern slope of the mountain, by a gradual ascent of about sixty feet to the mile, we arrived at the foot of the hill which forms the summit of the Sierra Madre. Here might be required a tunnel about a mile in length, which would reach a similar ravine upon the Pacific side, leading by a beautiful slope, not exceeding in any part 61 feet to the mile; three days' journey to Zuni. The party which explored the northern pass reports much more favorably. The summit is said to have been passed unperceived, and a grade of twenty-five feet to the mile will conduct from Ojo Azul, which flows toward the Gulf of Mexico to Rio Puerco of the West, which, emptying into the Rio Colorado, seeks the Pacific Ocean. We are, therefore, now upon the Pacific waters, having found excellent passes through the range of Rocky Mountains and the Sierra Madre. Timber for the construction of a railroad is abundant from the Choctaw nation to Walnut and Deer creeks, also from Rio Pecos to Sandia Mountain, and in the Sierra Madre. For masonry, there is excellent material over the whole route. Coal is abundant in the Choctaw nation, on Rio Galisteo, in the Carmel canon, on Rio Puerco, and at Ojo de Gallow. Extensive beds of gypsum also occur in various localities. From the headquarters of the Washita, which approach within two or three miles of the Canadian, an excellent route for a railway extends east-south-east as far as that river was followed by us. Well-wooded valleys, flowing streams, fertile soil and charming climate, all invite the emigrant thither. To pursue the stream to its mouth, and thence to New Orleans, would doubtless form one the main branches of a railway from California, by way of the Canadian. The appearance of the country north of the Canadian, in the direction towards the western part of the Missouri, showed nothing to lead us to infer greater obstacles in the construction of a branch from the great bend of the Canadian to Springfield than we had found on our route. Indeed, our geologist, Mr. Marron, having previously paid particular attention to the geological character of that section of country, assures me that it is highly favorable for the object proposed. Without doubt, therefore, a main branch of this road would lead to St. Louis. Water for camping purposes, on the whole route from Fort Smith to this place, has failed us but once. That was on the Sierra Madre, where water could be easily obtained by tanks, in others by aqueducts, while in a few places Artesian wells may be resorted to with greater advantage. To-morrow we proceed hence, taking a due west course, which we hope will lead us to the Pacific in time to lay before Congress a more full report in Febr'y next.

In great haste, I remain, very respectfully,
Your obedient servant,
A. W. WHIPPLE,
First Lieut. Corps Topographical Engineers.
Colonel J. J. ABERT.

Of all the reconnoissances made thus far, that of Governor Stevens seems to show the most satisfactory result, from the fact that it is the most complete. His surveys demonstrate a railroad to be entirely practicable upon his route, across the continent. No insurmountable difficulties will be met with in crossing the Rocky Mountains, and the coast range can be avoided by following down the Columbia River. Upon none of the other routes have the surveys been carried from the Mississippi to the Pacific, so that we are not yet in possession of sufficient evidence to make a comparison of the several routes proposed.

Railroads of Indiana.

The Indiana State Journal gives the following table, showing the number of miles of railroad in that State in progress, operation and contemplation:

In operation—	Miles.
Central Michigan.....	40
Southern Michigan and Northern Indiana.....	120
New Albany and Salem.....	258
Lafayette and Indianapolis.....	66
Terre Haute and Indianapolis.....	78
Evansville and Crawfordsville.....	51
Martinsville and Franklin.....	25
Jeffersonville.....	77
Madison and Indianapolis.....	86
Indianapolis and Cincinnati.....	90
Shelbyville and Edinburg.....	16
" " Columbus.....	23
" " Knightstown.....	20
Ohio and Mississippi.....	55
Indiana Central.....	72
Richmond and Eaton.....	4
Richmond and Newcastle.....	28
Bellefontaine and Indianapolis.....	84
Peru and Indianapolis.....	72
Ohio and Indiana.....	20

Total, miles completed.....1,280

The following list comprises the number of miles in progress:

	<i>Miles.</i>
Indiana and Illinois Central.....	75
Evansville and Union.....	235
Wabash Valley.....	172
Cincinnati, Logansport and Chicago.....	165
Gosport and Indianapolis.....	43
Fort Wayne and Chicago.....	140
Fort Wayne and Sandusky.....	18
Logansport and Pacific.....	63
Marion and Mississinewa.....	84
Peru and Chicago.....	73
Cincinnati and Fort Wayne.....	114
Cincinnati, Cambridge and Chicago.....	130
Ohio and Mississippi.....	125
Junction.....	86
Cincinnati, Union and Fort Wayne.....	66

Total.....1,592

The following list comprises some of the contemplated roads, the distances given being those within this State:

	<i>Miles.</i>
Fort Wayne and Detroit.....	40
Fort Wayne to Coldwater.....	50
Cleveland and St. Louis, air line.....	175
Indianapolis and Cincinnati, valley line.....	82
New Albany and Sandusky.....	112
Fort Wayne and Southern.....	165
Indianapolis and Vincennes.....	108

Total.....782

RECAPITULATION.

Miles in operation.....	1,280
" " progress.....	1,592
" " contemplation.....	782

Total.....3,654

Locomotive Building in St. Louis.

In the abstract of trades and manufactures of St. Louis, published in a recent number of the *Missouri Republican* we find the following particulars of the works of Messrs. Palm and Robertson, the Pioneer locomotive builders of the country west of the Mississippi.

The foundry and machine shop of Palm and Robertson, on South Third street, is a little over five years old. In the summer of 1848 the first building was erected, a frame shop 30 feet square. Since then the business has grown so as to require more ground as well as more buildings. The establishment at this time, embraces about 61,000 square feet, or nearly one and a half acres, of which about 31,000 square feet, nearly three-fourths of an acre, is covered by substantial brick buildings, containing the different work shops, and the rest is occupied as yard room for materials, &c., and partly covered, by wooden sheds. The establishment contains a pattern maker's and carpenter's shop an iron foundry, a brass foundry, smithshop, a boiler maker's shop, a coppersmith shop and a finishing or machine shop. It employs at present 150 men, chiefly in building locomotives, of which, up to this time, five have been finished, the first being turned out in July last, and the fifth about the 10th of December. As soon as the demand shall justify it this shop will turn out one locomotive every two weeks. A portion of the force is employed in manufacturing tools for machine shops and railroad repair shops, and the tools already manufactured there will compare with the best Eastern built tools. The proprietors have, during the past year, introduced a feature which is of great benefit to the workman, and deserves to be imitated by others. They have engaged one of the best physicians of this city for the workmen. He has an office and dispensary in the establishment, and calls every day to minister to the wants of any of the men who may be sick, without expense to them.

From the same source we have the following interesting account of the manufacture of refined iron in the city of St. Louis.

ST. LOUIS ROLLING MILLS.

Owned by Messrs. Chouteau, Harrison and Valle, projected and erection commenced during the summer of 1850.

This establishment is situated in the upper part of the city, and with its appurtenances, covers near fifteen acres of ground. The Rolling Mill building is 256 feet in length by 130 feet in breadth. A row of eighteen brick houses is attached to it, presenting a front of 300 feet by 80 in depth, and affording ample and comfortable lodgings for 36 families. Warehouse 100 feet square, and balance of ground occupied by blacksmith and carpenter's shops, sheds, outhouses, stables, stock and coal yards.

Thirty-nine furnaces are at this time in full operation, subdivided as follows, viz: 11 boiling, 2 scrap, 1 lump, 8 bar mills, 2 billet, 2 slab, 2 sheet, 1 dandy, 1 annealing, 1 nail plate, 2 railroad chairs, and 1 spike and rivet machine.

The motive power used is steam, obtained from waste heat, by means of 18 boilers suspended over the furnaces and feeding three engines; first, the doctor, which supplies the boilers and the entire establishment with water, secondly the bar mill engine 27 inches diameter, 6 feet stroke, driving the muck mills, squeezer, hammer, merchant mills, and saw; thirdly, the sheet mill engine, 26 inches diameter, 5½ feet stroke, driving the small or guide mill, boiler, sheet and nail plate mills, nail machines, 28 in number, 1 railroad, boat spike and rivet machine, 2 railroad chair machines, turning lathe and shears.

This mill derives its main supplies of pig metal, blooms and ores, from the Iron Mountain, and turns out a weekly average of 125 tons of finished iron, in the shape of bar iron, boiler plate, sheets, nails, railroad spikes, boat spikes, rivets and railroad chairs.

Three hundred and fourteen men and boys and

thirty-nine wagons and carts find constant employment, exclusive of special jobs and contracts. The average consumption of fuel amounts to 1,600 bushels of stone coal daily.

More Consolidation.

The Baltimore Sun says:

"We learn that a project is in contemplation and, indeed, that steps are about to be taken by the parties interested, to consolidate the railroad companies comprising the lines of route between Baltimore and Harrisburg, with a view to a more effective and economical administration of their operations. The companies constituting this line are the Baltimore and Susquehanna, York and Maryland, and York and Cumberland—the former in this State and the two latter in Pennsylvania."

Arrangement of Locomotives as Affected by the Gauge of Railroads.

BY ZERAH COLBURN.

There has been within a few years such a general revolution of sentiment in respect to the merits of the "wide gauge," so called, that it seems almost useless in most localities to revive any discussion upon the subject. Yet there are occasionally some schemes brought up wherein the entire basis is determined by *gauge*, in other words, a *narrow gauge* is not needed, and the assumed objects of the road are such as are contingent upon a *preference* for a *wide gauge*.

There is a case at issue, at the present time, of precisely the above description. A proposition is made to extend the 6 feet gauge from the New York and Erie line to Cincinnati, thus forming, through the Ohio and Mississippi road, a continuous broad gauge from New York to St. Louis.

The advantages of the proposed road are estimated upon those of a wide gauge and of a continuous connection. But, so far, all experience has established the superiority of the narrow gauge of 4 feet 8½ inches, as regards application of *power*, and it is demonstrably true that the expenses of *power* are the most important in amount of the whole expenses of operating railroads. The through business between New York and St. Louis will be done at a *disadvantage* upon such portion of the distance as lies upon a six feet track, a disadvantage such as should prevent its further extension, and which will amply warrant the delay and expense of a change at any one or two points, from such, to a better and more economical gauge.

In the respect of continuous connections, it is easily seen that the local business, and that of tributary roads, which must be the principal resources of all paying roads, will be taxed with double, and perhaps quadruple, the expense for breaking bulk, by the interposition of a gauge different from that of all the sources through which that business must be supplied, than were the gauge *uniform* in Ohio. If *all* cannot be uniform, it is better that the *tributaries* be all alike, let the *outlet* be what it may.

Our present subject is, however, the adaptation of the locomotive to the gauge of railroads. One of the principal advantages claimed by the advocates of a gauge wider than that in general use, was the better arrangement which could be made of the machinery of the locomotive. At about the time that this claim began to be urged, the locomotive was reaching the height of complication, and its plan was such as to impose almost impassible limits to any sensible increase of size and power. This plan was such as to place the essen-

tial working parts directly beneath the boiler and in the width intervening between the driving wheels. A space of little over three feet was occupied by two complete engines, with all of their apparatus for reversing, and complicated expansion gear, pumps, etc. It involved the use of heavy crank axles, which were very objectionable from their weight, cost, friction, danger of fracture, and space occupied, vertically, laterally and horizontally. It required a greater distance between the driving wheels, or a reduction in the length of furnace; a difficulty in arranging the whole engine on driving wheels for purposes requiring the greatest adhesion; it involved a bad arrangement for a truck frame, and unduly crowded the valve motion. By elevating the boiler, the height of chimney was reduced, to pass under a given height of bridge, or otherwise, the frontage, and consequent resistance was increased. But much more than all the rest, the height of the boiler became a limit for the size of the driving wheels, so that practically but a moderate sized wheel could be had, by which the reciprocations, and consequently the friction and wear of the working parts, were unduly increased for a given speed, besides the resistances of compression, blast, etc., so that high speeds were more difficult of attainment, by reason of the resistances of the *locomotive*, than by the resistances of the *train*.

As this general arrangement was objectionable, an increase of gauge only made it still more so, by allowing an increase of its weight, cost, friction, bulk and danger.

But by a different plan, which has been brought into use in this country, and to an extent in England, in cases where the width of gauge imposed no limits on the arrangement of the engine, the locomotive has been so much simplified as to adapt it so well to the ordinary gauge, as to make any considerable increase of width decidedly objectionable, by impairing the value of the proportions and arrangements of the machinery. This plan is that of the outside connection, upon which the largest locomotives ever required may be easily constructed. The capacity of expansion possessed by this arrangement is greater than is ever availed of in any ordinary transportation, so that it may be well said that it provides for engines of practically unlimited power. It has none of the objections of the inside connected arrangement and involves none peculiar to itself.

The limit which a narrow gauge imposes upon the dimensions of the evaporative apparatus of the locomotive is really a useful one. The limit to the diameter of the boiler of a passenger engine, with over 5 feet wheels, is 51 inches for the narrow gauge. Very few builders give over 43 inches, and generally not nearly all of this opportunity for increase of size is availed of. The limit to the width of grate, with ample surrounding water spaces, is 45 inches; whereas very few builders give over 38 inches. Now it is wholly useless to talk of the "incapacity of the narrow gauge until these limits are generally approached."

The proportion of a grate of 45 inches width to a boiler of 51 inches diameter is not out of a good proportion of locomotive boilers, while it gives a much greater relative width of grate than is generally allowed. With the usual length of locomotive boilers, and the opportunities for still further

extension, a boiler of over 51 inches in diameter is not required, and inasmuch as the strength of boilers diminishes as their diameters are increased, a larger diameter cannot be considered as safe. A boiler 51 inches in diameter is about *one-half* larger than one of 42 inches, which latter is a common size for powerful engines. By the adoption of the "elevated crown" upon the fire-boxes of modern boilers, and the use of two steam domes in place of one, the water level may be carried much higher than formerly, besides securing other important advantages. It is not, therefore, difficult to obtain twice or three times, the *usual* capacity for locomotive boilers, if required, upon the narrow gauge.

There is one important consideration to be regarded, which is, that by any increase of gauge, and consequent increase of resistance, the engine must be made larger to do a given work, as compared with the narrow gauge. It is well known that no ordinary trains, such as are run upon the Erie Railroad, can be worked on that road by engines such as are used for a similar weight of trains on the narrow gauge. The weight of engines, and business done on the different gauges, is sufficient confirmation of this statement. The Erie road is not one having extremely difficult features, being better off in that respect than the Pennsylvania Central, Baltimore and Ohio, Western, and many other great roads.

The question of *gauge*, is one of much importance to the interests of railroads, and deserves to be intelligently discussed. To say "intelligently discussed" would seem to imply forgetfulness of all the discussion which has attended the progress of the question in England and in America, but not to my knowledge, have the *mechanical* merits of the gauges ever been discussed, in any stage of the controversy. The question of the *power* necessary to work the respective gauges, is the real one of importance, for the power must be proportional to resistance, and the chief good of railroads is in their reduction of resistance. *Power is money*, the two being mutually convertible in the operations of transportation.

The following is an argument which I have presented before, in demonstrating the mechanical disadvantage of a wide gauge, and its deductions are in exact harmony with practical operations of the New York and Erie Road. It was given in the Journal of November 12th, 1853:

"The least limit of the width of gauge is that which will afford the necessary capacity and insure the necessary steadiness of the carriages to be used. The most advantageous application of the power of draught, is that where the load tends to move in the direction in which the power is applied. The position of the wheels, or in common phrase, the "*tracking* of the wheels," determines the direction in which the load tends to move. This direction may not be essentially the same as that in which the power is applied, in which case, the flanges of the wheels are forced against the rails and produce much friction, or "*binding*." With the truck frame, in almost universal use in America, the center pin becomes a fulcrum, upon which the wheels turn and adjust themselves to the track and to the direction of the draught. The distance of the wheels from this fulcrum is the amount of leverage which a resistance on *one* rail has to change the position, or "*tracking*" of

the wheels, and to give the car a tendency to move in a direction out of the line of traction. The truck, moreover, cannot turn beneath the car except by slipping the wheels on one or the other side, and the wider the truck, the greater is the amount of slip and friction in obtaining the same angular change of position.

American Railroad Journal.

Saturday, March 11, 1854.

Back Numbers of the Journal.

Those who wish back numbers of the JOURNAL for binding are requested to order them at once, as we shall be able to supply them but a few weeks longer.

We can furnish BOUND VOLUMES for any or all years complete since 1831—price \$5—per year.

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Stock and Money Market.

The foreign news is not considered favorable for stock operations, and there has been a consequent decline of 2 or 3 per cent. in most of the fancies. The apparent certainty of an European war, is calculated to excite a depressing influence upon all speculative movements. First class securities are only slightly affected, and the market for bonds appears to be without alteration. The demand is not active, but the market is steady. Of the best secured bonds, considerable amounts are constantly finding their way to Europe, which, of course, relieves a large amount of capital for less current securities.

The earnings of railroads for February continue to show a satisfactory result. As far as received, they are as follows:

	1854.	1853.
New York and Erie.....	\$345,026	\$303,569
Hudson River.....	160,620	126,028
Michigan Central.....	90,848	40,045
Baltimore and Ohio, (main stem).....	279,856	99,017
Cleveland and Toledo.....	45,172	27,000
New York and New Haven.....	54,257	49,441

Evansville, Indianapolis and Cleveland Straight Line Railroad.

The letting of the first general division of 54 miles of the above road, extending from Evansville, Indiana, to the crossing of the Ohio and Mississippi railroad, took place at Evansville on the 15th of last month, and the contractors are already upon the work. This road is designed to be the great Central line from Buffalo and Cleveland by way of Indianapolis and Evansville; connecting the North with the South by a straight line, through Indianapolis, Evansville, Henderson, Paducah, and Memphis, to New Orleans; and also by a line from Evansville and Henderson to Nashville, Tenn., and the railroads radiating from that place. The work is in the hands of energetic and experienced men, resolved to put it through at the earliest possible day. The subscriptions of the cities and individuals on the line, are, we understand, large; upon which the company are preparing bonds to a limited amount, to aid in the rapid construction of the work. Although this is

Railway Share List,

Compiled from the latest returns—corrected every Wednesday—on a par valuation of \$100.

NAME OF COMPANY.	Miles open.	Capital paid in.	Funded debt.	Tot. cost of road and equipment.	Gross Earnings for last official year.	Net Earnings for last official yr.	Dividend for do.	Price of Shares.	
Atlantic and St. Lawrence... Maine.	150	1,538,100	2,973,700	5,150,278	254,743	113,520	none	83	
Androscoggin and Kennebec... "	55	809,878	1,016,500	2,064,458	140,561	80,053	none	30	
Kennebec and Portland..... "	72	952,621	297,80	2,514,067	168,114	100,552	none	41	
Port., Saco and Portsmouth... "	51	1,355,500	123,884	1,459,384	208,669	.....	6	98
York and Cumberland..... "	20	285,747	341,100	713,605	23,946	11,256	none	24	
Boston, Concord and Montreal. N. H.	93	1,649,278	622,200	2,540,217	150,538	79,659	none	82	
Concord..... "	35	1,485,000	none.	1,485,000	305,805	141,838	8	110	
Cheshire..... "	54	2,078,625	720,900	3,002,094	287,768	55,266	5	38	
Northern..... "	82	8,016,634	.....	.....	328,782	163,075	6	59
Manchester and Lawrence.... "	24	717,543	.....	.....	.....	.....	6	91
Nashua and Lowell..... "	15	600,000	none.	651,214	132,545	51,513	8	109	
Portsmouth and Concord.... "	47	.....	.....	1,400,000	.....	.....	none	.....
Sullivan..... "	26	.....	.....	673,500	.....	.....	none	21
Connecticut and Passumpsic.. Vt.	61	1,097,600	550,000	1,745,516	.....	.....	none	26
Rutland..... "	120	2,486,000	2,429,100	5,577,467	495,397	266,539	none	94	
Vermont Central..... "	117	8,500,000	3,500,000	12,000,000	.....	.....	.....	13
Vermont and Canada..... "	47	1,500,000	.....	1,500,000	Leased to	the Vt.-C	ent.	97
Western Vermont..... "	51	392,000	700,000	.....	Recently	opened.	none	.....
Vermont Valley..... "	24	.....	.....	.....	.....	.....	none	.....
Boston and Lowell..... Mass.	28	1,830,000	.....	1,995,249	388,108	130,881	7	91
Boston and Maine..... "	83	4,076,974	150,000	4,092,927	659,001	338,215	7	102	
Boston and Providence..... "	53	3,160,390	390,000	3,546,214	469,656	227,434	6	84	
Boston and Worcester..... "	69	4,500,000	425,000	4,845,967	758,819	331,296	7	101	
Cape Cod branch..... "	28	421,295	171,800	633,906	60,743	30,056	2	40	
Connecticut River..... "	52	1,591,100	193,500	1,801,946	229,004	72,028	5	55	
Eastern..... "	75	2,850,000	500,000	3,120,391	488,793	241,017	7	88	
Fall River..... "	42	1,050,000	none.	1,050,000	229,445	99,589	8	99	
Fitchburg..... "	66	3,540,000	112,305	3,623,073	574,574	232,787	6	91	
New Bedford and Taunton... "	20	500,000	none.	520,475	164,230	43,950	7	117	
Norfolk County..... "	26	547,015	819,743	1,245,927	67,251	23,415	none	68	
Old Colony..... "	45	1,964,070	282,300	2,293,534	374,897	122,816	none	98	
Taunton Branch..... "	12	250,000	none.	307,136	137,406	24,399	8	.....
Vermont and Massachusetts.. "	77	2,140,536	1,001,500	3,203,333	218,679	18,648	none	21	
Worcester and Nashua..... "	45	1,134,000	171,210	1,321,945	162,109	66,900	4	59	
Western..... "	155	5,150,000	5,319,520	9,953,759	1,525,224	746,736	7	97	
Stonington..... R. I.	50	.....	467,700	.....	240,572	110,892	.....	71
Providence and Worcester... "	40	1,457,500	300,000	1,791,999	291,417	120,892	6	97	
Canal..... Conn.	45	922,500	500,000	1,400,000	.....	.....	4	65
Hartford and New Haven.... "	72	2,350,000	800,000	3,150,000	639,529	294,269	10	129	
Housatonic..... "	110	.....	.....	2,500,000	329,041	168,902	none	.....
Hartford, Prov. and Fishkill. "	50	.....	.....	In progres	69,629	.....	none	.....
New London, Wil. and Palmer "	66	558,861	800,000	1,511,111	114,410	.....	.....	39
New York and New Haven... "	61	3,000,000	1,641,000	4,978,487	806,713	428,173	7	102	
Naugatuck..... "	62	926,000	440,000	.....	.....	.....	8	.....
New London and New Haven. "	55	750,500	650,000	1,380,610	Recently	opened.	none	40
Norwich and Worcester..... "	54	2,121,110	701,600	2,596,488	267,561	116,965	4	58	
Buffalo and New York City.. N. Y.	91	900,000	1,550,000	2,550,500	Recently	opened.	none
Buffalo, Corning and N. York. "	132	.....	.....	In progres	.....	.....	none	65
Buffalo and State Line..... "	69	879,636	872,000	1,921,270	Recently	opened.	130
Canandaigua and Niagara F.. "	50	.....	.....	In progres	.....	.....	.....	.....
Canandaigua and Elmira.... "	47	425,509	582,400	987,627	76,760	39,360	none	68	
Cayuga and Susquehanna.... "	35	687,000	400,000	1,070,786	74,241	23,496	none	.....
Erie, (New York and Erie)... "	464	10,000,000	24,003,865	33,070,863	4,818,962	1,800,181	7	81	
Hudson River..... "	144	3,740,515	7,046,395	10,527,654	1,068,659	338,783	none	69	
Harlem..... "	130	4,725,250	977,463	6,102,935	681,445	324,494	4	56	
Long Island..... "	95	1,875,148	516,246	2,446,391	205,068	44,070	one	34	
New York Central..... "	504	28,085,600	10,773,823	33,859,423	.....	.....	.....	101
Ogdensburg (Northern).... "	118	1,579,969	2,969,760	5,133,834	480,137	195,847	1	27	
Oswego and Syracuse..... "	35	350,000	201,500	607,803	90,616	43,609	.....	70
Plattsburg and Montreal.... "	23	174,042	131,000	349,775	Recently	opened.	none
Rensselaer and Saratoga.... "	25	610,000	25,000	774,495	213,078	96,737	.....	.....
Rutland and Washington.... "	60	850,000	400,000	1,250,000	.....	Recently	opened.	.....
Saratoga and Washington.... "	41	899,800	940,000	1,832,945	173,545	135,017	none	30	
Troy and Rutland..... "	32	237,690	100,000	329,577	Recently	opened.	33
Troy and Boston..... "	39	430,936	700,000	1,043,357	Recently	opened.	none
Watertown and Rome..... "	96	1,011,940	650,000	1,693,711	225,162	116,706	8	96	
Camden and Amboy..... N. J.	65	1,500,000	.....	4,327,493	1,388,385	478,413	10	148
Morris and Essex..... "	45	1,022,420	128,000	1,220,325	149,941	79,252	7	.....
New Jersey..... "	31	2,197,840	476,000	8,245,720	603,942	316,259	10	131	
New Jersey Central..... "	63	986,106	1,500,000	2,379,880	260,899	124,740	3	.....
Cumberland Valley..... Penn.	56	1,184,500	13,000	1,265,143	118,617	76,890	5	.....
Erie and North East..... "	20	600,000	750,000	Recently	opened.	125
Harrisburgh and Lancaster.. "	36	830,100	713,227	1,702,523	265,327	106,320	8	55	
Philadelphia and Reading.... "	95	6,656,332	10,427,800	17,141,987	2,480,626	1,251,987	7	80	
Philad., Wilmington and Balt. "	98	5,000,000	2,399,168	8,067,285	868,038	541,769	5	80	

Railway Share List,

Compiled from the latest returns—corrected every Wednesday—on a par valuation of \$100.

NAME OF COMPANY.	Miles open.	Capital paid in.	Funded debt.	Tot. cost of road and equipm't.	Gross Earnings for last official year.	Net earnings for last official yr.	Dividend for do.	Price of shares.
Pennsylvania Central..... Penn.	250	9,768,155	5,000,000	13,800,000	1,948,827	617,625	....	97
Philadelphia and Trenton.... "	30	.....	.....	.....	.....	.....	.....	102½
Pennsylvania Coal Co..... "	47	.....	.....	.....	.....	.....	.....	58
Baltimore and Ohio..... Md.	381	13,118,902	5,677,103	22,254,338	2,033,420	798,193	7	58
Washington branch..... "	38	1,650,000	.....	1,650,000	348,622	216,237	8	.....
Baltimore and Susquehanna.. "	57	.....	.....	.....	413,673	152,536	.....	.....
Alexandria and Orange..... Va.	65	.....	.....	In prog.	.....	.....	.....	.....
Manassas Gap..... "	27	.....	.....	In prog.	.....	.....	.....	.....
Petersburgh..... "	64	769,000	173,867	1,163,928	227,593	72,370	7	77
Richmond and Danville.... "	73	1,372,324	200,000	In prog.	.....	.....	.....	70
Richmond and Petersburg.... "	22	685,000	.....	1,100,000	122,861	74,113	none	40
Rich., Fred. and Potomac.... "	76	1,000,000	503,006	1,531,238	254,376	113,256	7	100
South Side..... "	62	1,857,778	640,000	2,106,467	62,762	.....	.....	.....
Virginia Central..... "	107	1,673,684	469,150	2,392,215	210,052	99,077	10	50
Virginia and Tennessee.... "	73	2,650,091	707,958	3,545,256	109,268	42,736	none	98
Winchester and Potomac.... "	32	180,000	120,000	416,532	89,776	.....	12	.....
Wilmington and Raleigh.... N. C.	161	1,338,873	1,134,698	2,965,574	510,038	153,898	6	.....
Charlotte and South Carolina. S. C.	110	.....	.....	.....	.....	.....	.....	.....
Greenville and Columbia.... "	140	1,004,231	300,000	In prog.	.....	.....	.....	.....
South Carolina..... "	242	3,858,840	3,000,000	7,002,396	1,000,717	609,711	7	125
Wilmington and Manchester. "	.....	.....	.....	In prog.	.....	.....	.....	.....
Georgia Central..... Ga.	191	3,500,000	418,187	3,465,879	986,074	535,608	8	115
Georgia..... "	211	4,000,000	1,214	.....	934,424	456,468	7½	.....
Macon and Western..... "	101	1,013,088	163,000	1,277,334	278,739	149,960	9	101
Muscogee..... "	71	.....	.....	In prog.	59,590	21,731	.....	.....
South Western..... "	50	586,887	150,000	743,525	129,395	71,535	8	.....
Alabama and Tennessee River Ala.	55	.....	.....	In prog.	.....	.....	.....	.....
Memphis and Charleston.... "	93	776,259	400,000	In prog.	.....	.....	.....	.....
Mobile and Ohio..... "	33	879,868	.....	In prog.	.....	.....	.....	.....
Montgomery and West Point. "	88	688,611	.....	1,330,960	173,542	76,079	8	.....
Southern..... Miss.	60	.....	.....	.....	.....	.....	.....	.....
East Tennessee and Georgia.. Tenn.	80	835,000	541,000	In prog.	.....	.....	.....	.....
Nashville and Chattanooga.. "	125	2,093,814	850,000	In prog.	.....	.....	.....	.....
Covington and Lexington.... Ky.	38	1,430,150	900,000	In prog.	.....	.....	.....	63
Frankfort and Lexington.... "	29	357,218	.....	584,902	87,421	44,250	.....	80
Louisville and Frankfort.... "	65	.....	.....	.....	.....	.....	.....	.....
Maysville and Lexington.... "	.....	.....	.....	In prog.	.....	.....	.....	45
Cleveland and Pittsburgh.... Ohio.	100	1,979,100	1,142,200	3,279,908	432,632	267,278	10	91
Cleveland and Toledo..... "	147	2,000,000	1,600,000	.....	.....	.....	.....	99½
Cleveland, and Erie..... "	95	.....	.....	.....	.....	.....	.....	.....
Cleveland and Columbus.... "	135	3,027,000	408,200	3,655,000	777,793	483,454	12	121
Columbus, Piqua and Indiana. "	46	.....	.....	2,000,000	.....	.....	.....	65
Columbus and Lake Erie.... "	61	.....	.....	.....	.....	.....	.....	.....
Cincinnati, Ham. and Dayton "	60	2,100,000	500,000	2,659,653	321,793	200,967	.....	104½
Cincinnati and Marietta.... "	.....	.....	.....	In prog.	.....	.....	.....	62
Dayton and Western..... "	40	310,000	550,000	925,000	Recently opened.	.....	.....	75
Dayton and Michigan..... "	20	.....	.....	In prog.	.....	.....	.....	.....
Eaton and Hamilton..... "	36	.....	.....	.....	.....	.....	.....	56
Greenville and Miami..... "	31	.....	.....	.....	.....	.....	.....	.....
Hillsboro..... "	37	.....	.....	In prog.	.....	.....	.....	.....
Little Miami..... "	84	2,668,402	482,000	3,169,733	667,559	352,133	10	109½
Mansfield and Sandusky.... "	.....	900,000	1,000,000	1,855,000	.....	.....	.....	.....
Mad River and Lake Erie.... "	167	2,387,200	1,767,000	4,110,148	540,518	113,401	.....	77½
Ohio Central..... "	57	.....	.....	In prog.	.....	.....	.....	79
Ohio and Mississippi..... "	.....	.....	.....	.....	.....	.....	.....	.....
Ohio and Pennsylvania.... "	187	1,750,700	2,450,000	.....	.....	.....	.....	.....
Ohio and Indiana..... "	.....	.....	.....	In prog.	.....	.....	.....	.....
Scioto and Hocking Valley.. "	44	750,000	300,000	.....	.....	.....	.....	.....
Xenia and Columbus..... "	54	1,291,000	300,000	1,257,714	317,000	158,500	10	107
Evansville and Illinois.... Ind.	31	.....	.....	In prog.	237,506	.....	.....	.....
Indiana Central..... "	.....	.....	.....	.....	.....	.....	.....	77½
Indiana Northern..... "	131	.....	.....	.....	.....	.....	.....	115
Indianapolis and Bellefontaine "	83	.....	.....	.....	.....	.....	.....	87
Indianapolis and Cincinnati. "	90	1,128,486	1,289,000	1,869,932	Recently opened.	.....	.....	72
Lafayette and Indianapolis.... "	62	.....	.....	.....	.....	.....	.....	.....
Madison, Indianapolis & Peru "	138	2,647,700	1,241,300	2,400,000	516,414	268,075	10	70
Peru and Indianapolis..... "	40	.....	.....	In prog.	.....	.....	.....	65
Terre Haute and Indianapolis "	72	632,387	663,100	1,353,019	105,944	71,446	4	108
Rock Island and Chicago.... Ill.	.....	.....	.....	.....	.....	.....	.....	.....
Chicago and Mississippi.... "	135	2,400,000	4,000,000	4,600,000	.....	.....	.....	.....
Illinois Central..... "	.....	.....	.....	.....	.....	.....	.....	.....
Galena and Chicago..... "	92	1,932,361	500,000	In prog.	473,548	236,152	.....	118
Michigan Southern and Ind. N. Mich.	316	2,800,000	3,741,564	7,276,616	1,200,922	586,929	17	119½
Michigan Central..... "	282	4,856,700	3,977,563	8,618,505	1,145,598	583,816	8	106½
Pacific..... Mo.	88	1,000,000	none.	In progress	Recently opened.	.....	.....	.....

a new line, yet the importance of its connections, and the aid it will afford the roads already built, with which it will be the connecting link, will make it an exception to the remarks we have made as the construction of new works at this time.

Edwin F. Johnson upon the Pacific Railroad.

We have published, and have for sale, E. F. Johnson's recent work upon the Pacific Railroad. Mr. Johnson is admitted to be one of the first Engineers in this country, and his reputation is a good guaranty that the subject under discussion has been thoroughly considered and discussed. The work is illustrated by a large map, showing all the proposed routes, a profile of the Northern Route, a map of the mountain chain traversed by it, and seven lithographic views of various points upon its line. The whole work is elegantly got up, and makes a volume of 176 Pages, Octavo.

Persons wishing to procure copies of the above work, by forwarding one dollar to our address, can have a copy of the same with the maps, forwarded by mail post paid.

Working of Railroads in New England.

We have in preparation, and shall present at an early day, an elaborate investigation of the operation and results of the working of New England railroads, with especial reference to their application of motive power. We shall attempt, and shall expect to show, that, leaving out the subject of their gross receipts, their expenses of operation have been largely increased by the insufficient character of their motive power, in general use. The consideration of the subject will include an illustration of the systems of motive power in use on the Baltimore and Ohio, Reading, and New York and Erie roads, with suggestions for improvement of the locomotive, in its plan, proportions, manufacture and management. Believing the subject to be of especial importance to the interests of many of our railroads, we thus wish to bespeak the attention of their managers on its appearance.

Progress of the Sugar Interest in Louisiana.

The Hon. Thomas G. Hunt, member of Congress from Louisiana, furnishes the National Intelligencer with the following results of the sugar interests of his State, on the basis of the crop of 1853:

Estates.	Yield in hhds.	Value each.	Total.
548.....	100 or less	\$40,000	\$21,920,000
347.....	100 to 200	75,000	26,025,000
232.....	200 to 300	99,000	20,884,000
132.....	300 to 400	125,000	16,500,000
81.....	400 to 500	150,000	12,150,000
64.....	500 to 600	175,000	11,200,000
33.....	600 to 700	200,000	6,600,000
14.....	700 to 800	225,000	3,150,000
9.....	800 to 900	250,000	2,250,000
10.....	900 to 1000	275,000	2,750,000
6.....	1000 to 1100	300,000	1,800,000
2.....	1100 to 1200	325,000	650,000
3.....	1200 to 2000	350,000	1,050,000

Total value.....\$126,929,000

There were in operation, in the year 1853, 1,418 sugar estates, of which there were worked by steam, 943; and by horse power, 538. Using the old process by open kettles, 1,428; using the vacuo process, 53.

Proportions of Locomotives.

The perfection of the Locomotive is an object not confined only to mechanics and engineers; it affects the financial prosperity of railroads everywhere. The adaptation of locomotives is one of the most important parts of the system of railroad management, because "power is money," and is available in this conversion in proportion as it is made effective. It is with these views that the *Journal* has devoted so much space to discussions relative to the locomotive, in all of which, it has endeavored to present correct principles as the basis of improvements. In the mechanical structure of the machine, we have many examples of a very high degree of perfection, but in the adaptation of engines to the business and physical features of our railroads, there is yet ample room for improvement, and to such an extent as sensibly to increase the profits of railroad business. In the view of the greatest part of the management of railroads, the system is perfect, and this most erroneous opinion is one of the greatest difficulties in the way of improvement. We know, from direct observation, that, generally, the roads doing the most unsatisfactory business, are stocked with the most inefficient motive power. The great secret of economy in the operations of all of our great freight roads, has been in the adaptation for which we contend. The most successful builders have appreciated these principles and established their system of engines, and their engineering reputation also, upon their application. Read the card of M. W. Baldwin & Co., who are now advertising in this paper; and note the expression of engineering principles contained therein. Mr. Wilians, long since established a similar system, and this system of engines introduced by these builders, is that under which the Baltimore and Ohio, and Reading Roads now conduct their freight transportation at such notoriously low rates. It has enabled them to carry maximum trains at low speeds, which has been the entire means of their brilliant success in that branch of transportation.

In considering the proportions of locomotives, we take the weight of steam expended in a given unit, as a standard of comparison. With some engineers, this unit is one of time, say one hour, but for freight engines we make it one of distance, as one mile. The weight of steam is proportional to the product of its volume and pressure. The standard of distance is always the same, that of time varies with the speed accomplished.

The only object of speed on railroads is accommodation; it is certainly not economy. Heavy freight pays no better if carried at thirty miles an hour than at fifteen, while the cost of carrying at the former speed would be more than doubled, in cases where the usual trains were up to the capacity of the engines.

Now the most economical proportion of a locomotive, is that which will not permit of being run at anything above an economical speed. And to this would have to be added a strict supervision upon the enginemen, that they should not carry such pressure of steam as to exceed that speed, for an engine with small wheels may injure the road, and wear itself more, at a speed higher than that at which it was designed to be run, than another engine designed for a higher speed.

Those proportions which, with a given pressure,

are of chief importance in determining the speed of locomotives, are the length of stroke and size of driving wheel. As the stroke is lengthened, and driving wheel reduced in size, the velocity is diminished, while the tractive power is increased. Hence, the large cylinder and small wheel require but little larger boiler, as more time is given to generate, with the same boiler, the increased quantity of steam. This is the reason why the Baltimore and Philadelphia freight engines have so small boilers, as compared with their expenditure of steam per mile, and why they always furnish an abundance of steam. Their present allowance of boiler room is indeed so ample, that enginemen, out of the reach of supervision, can easily raise such a pressure of steam as to run these engines at injuriously high speeds, for which they were never intended. The engines in use on the Baltimore and Ohio road, are generally worked at a lower pressure than on most of the northern freight roads, a custom which, whatever may be its economy, shows that the necessary pressure on the piston is maintained with a reduced pressure in the boiler.

The economical speed of freight trains is a subject to which railroad companies must direct their most serious attention, as it involves the profit of much of their business, and affects the general value of railroads, as facilities for communication. And contingent upon the determination of the speed, should be the proportions of locomotives designed for that speed.

The Air Line Railway to Montreal--Contract for the Missisquoi Road Executed.

At a meeting of the Directors of the Missisquoi Railroad Company held at Island Pond on Tuesday last, contracts were executed with the eminent and wealthy firm of Gzowski & Co., for building the entire line from Island Pond to Montreal. An amalgamation of the Canadian and Vermont Companies has been effected, and the Missisquoi road or that portion of the line lying within the State of Vermont, has contracted with the Montreal Junction Railway Company of Canada, to lease its road for the term of 999 years, so that by the terms of agreement between the two Companies, their interests are made one, and the entire line thus consolidated, or amalgamated, is under contract on terms that secures its completion.

The firm of Gzowski & Co., is composed of Messrs. A. T. Galt, M. P., Luther H. Holton, D. L. McPerson, C. S. Gzowski, Esqrs., names well known to the business men of Portland, whose eminent ability and high character are a guarantee of success to any enterprise in which they may choose to embark.

The contracts with this firm embrace the entire cost of construction, including land damages, station houses and equipment, from the Terminal Station of the Grand Trunk Railway at the Victoria Bridge at Montreal, to the Depot at Island Pond, a distance of about 100 miles. This line shortens the distance from Montreal to Portland 40 miles, over the present line, by the way of Sherbrooke and Richmond. and is more favorable also, in point of grades and curvature.

Messrs. Gzowski & Co. are building that portion of the Grand Trunk Railway from Toronto to Port Sarnia, and it is understood that their present contract for this short line to Montreal, is made with the hearty approbation of the Grand Trunk Railway.

Mr. Galt, in company with the Hon. Francis Hincks, sails from New York by the Baltic, on Saturday next.

About sixty miles of this line are within the limits of Canada, and 40 miles in Vermont. Toward the Canadian portion, municipal subscriptions have been obtained exceeding \$500,000, and

some private subscriptions are already made in Montreal.

The President of the Canadian Company, is the Hon. John Young, of Montreal, and Hon. Homer E. Royce of Berkshire is at the head of the Vermont Company.

The importance of this enterprise to Portland, and in fact to the whole State, is now fully apparent, and we intend to speak further of it, in this view, at an early day.—*State of Maine.*

Freight Tariff of the New York and Erie Railroad.

The construction of a freight tariff for railroad transportation, involves a great amount of labor, and of general examination of the nature, weight, bulk and risk of the articles to be carried. For the assistance of companies, engaged in framing, or revising freight tariffs, we give herewith a careful abstract of the conditions and charge of freight transportation, on the Erie Railroad, and of the estimation and classification of freight. At the conclusion, we shall append some deductions of a general nature, having a relation to the subject.

New York and Erie Railroad Freight Tariff—Adopted September-12th 1853.

CONDITIONS.

The business of the Freight Department of the Corporation, is to carry Property that is properly the subject of transportation in Freight Cars.

The Corporation will not, however, receive or carry on any Train, any Bank Bills, Drafts Notes, Deeds, Contracts, or other Writings, or be responsible for their loss.

No Conductor or other Agent of the Corporation is authorized to take charge of Bank Notes, Money, or other valuable Papers or Packages.

No Gold or Silver Coin, Bullion, or manufactured Articles of Gold or Silver, Jewels, Watches, Pictures, Plated Articles, Glass, Silks or Lace, will be carried by the Corporation, for the loss of which it will be responsible, unless with such Articles, when delivered, is also delivered a Memorandum in writing, stating the character and kind of Articles and their value, and unless a proper extra price for the carriage and responsibility of such Articles be paid.

Gunpowder, Friction Matches, and the like combustible Articles, will not be taken on any terms, and if found secreted, or among other Goods, they will be forfeited or destroyed, and in case of damage the Shipper or Consignor will be held liable therefor.

Articles will not be received for transportation unless properly Packed in suitable Casks, Boxes, Bales or Packages, and such must be well and clearly Marked, with the name of the Consignee and of the Station where they are to be delivered.

Goods in Bundles will not be considered as properly Packed, and will not be received on any terms.

No allowance will be made for deficiency of Lemons, Oranges or other Fruits in Boxes, Baskets or Barrels, unless the same are well covered with canvass, and clearly Marked.

The Corporation will not be responsible for Property unless duly receipted for by an authorised Agent, and the destination of Property cannot be changed after Shipment.

The Corporation will not be responsible for Damages occasioned by delays from Storms, Accidents, or unavoidable causes, or by decay or injury of Perishable Articles, or for injury to Property produced by frost, heat, or the elements.

Perishable Property must always be prepaid.

The Corporation will only be liable as Ware Housemen for Property while in their Store Houses, reserving the right to charge storage or send to store all Property not taken away within 48 hours after arrival.

In New York, all produce and other commodities must be removed from the Boats and wharf within 24 hours after their arrival.

When receipts are required, duplicates ready

for signing, must be furnished by the consignor.

All articles will be at the risk of the owners, at the several *Way Stations* and *Platforms* where Depot buildings have not been established by the Corporation, from the moment such articles are delivered as *directed or marked*; or until taken into cars, as the case may be.

No separate article or parcel, however small, unless forming part of an invoice will be taken for less than 100 lbs., and if part of an invoice, for less than 50 lbs.

Invoices not amounting to 25 cents at regular rates will be charged 25 cents.

When articles are designed after transportation upon this Railroad, to be forwarded by some other corporation or an individual to their final destination, the duplicate receipt furnished by the consignor must specify the same and the articles be marked accordingly. This Corporation will not be responsible for such articles after they are so delivered.

Stoves, Stove Plates and Furniture, and other light castings, and machinery of all kinds, will only be taken at owner's risk as to breakage.

One day only will be allowed for loading and unloading cars, unless a special agreement to the contrary be made in writing, and whenever a car is suffered to remain loaded for 24 hours, unless otherwise agreed, it will be at the option of the Corporation to unload the car and charge the classified rate without any deduction, or to charge for the use of the car while standing loaded, at the rate of \$1.00 per day.

Locomotive Engines and Tenders will be drawn at 30 cts. per mile in Freight Trains, in all cases. Passenger cars at 2 cts. per wheel per mile. Freight and Baggage Cars at 1 cent per wheel per mile.

Pig Iron, Gypsum, mineral Coal, Brick, Building Stone, Firewood, Posts and Rails, Clay, Sand, Lime, in bulk, and Manures must be loaded and unloaded by the owner. Should the Corporation, for their convenience in any case, choose to do the loading, then 10 cents per ton will be charged in addition; and for unloading under such circumstances, a charge of 10 cents per ton will also be made.

Freight delivered at side Tracks or Turnouts, will be accounted for as it tallies or weighs into the cars by the Corporation's Agent at the point where it started.

Freight taken from side Tracks or Turnouts, where the Corporation has no Agent, will be accounted for as it weighs or tallies out from the cars at the point of delivery.

Freight destined for Stations where the Corporation has no Agent, must be prepaid.

No article that the Agents of the Corporation do not consider worth the charge for Freight at forced sale, will be taken unless the freight on the same is prepaid to the Agent to whom it is delivered.

Articles in the Third or Fourth Class will be taken at the convenience of the Corporation.

This Corporation will not be accountable for the breakage of Glass, Glass Ware, Looking Glasses and Marble, or for damages to the hidden contents of packages, or for breakage and bursting, or by improper packing, or for loss of Nuts and Shot shipped in bags, nor for any deficiency in Dry Goods, Boots Shoes, Hats, Caps, and Straw Goods, unless the packages are properly strapped and sealed, when shipped.

Articles enumerated below, will be estimated to weigh as follows:

Carriages of all kinds will only be carried at owner's risk.

The character † denotes articles which in the classification of freight are specified to be carried by estimated weights.

†Stage Coaches, Omnibusses and very large Wagons or Sleighs will be rated at 6000 lbs. each.

†A two-horse Carriage, Hack, Wagon or Sleigh, not boxed, will be rated at 3000 lbs.

†A one-horse Buggy, Chaise, Cab, Cart, Gig, Sulkey, or Sleigh, not boxed, will be rated at 2000 lbs.

Carriages, when well boxed, double weight, at Owner's risk.

But if the owner of the carriage, &c., or his agent, shall load the same and assume the risk of any damage arising from exposure, fire, weather, chafing, or any other injury that may arise from imperfect packing, then the price to be charged will be Second Class Rates, at the above estimated weights.

Common Wagons and Carts, when sent five or more together, taken to pieces and closely packed, will be rated at actual weight.

Wood work of New Lumber Wagons or Carts not ironed, packed, in lots of five or more at one time, will be taken at actual weight.

†Household Furniture will be taken at owner's risk, well boxed, and at estimated weights, as follows: Sofas, 700 lbs.; Mahogany and Rosewood Bureaus, boxed, 500 lbs.; Mahogany Bedsteads, 300 lbs.; Mahogany Tables, 400 lbs.; Mahogany Washstands 300 lbs.; Mahogany Chairs, 100 lbs.; Shower Bath, 300 lbs.; Common Chairs, Toilet Tables and Washstands, 50 lbs.; Common Bedsteads and Tables, 100 lbs.

†Flour, 200 lbs.; Beef and Pork, 320 lbs.; Salt, 300 lbs.; per bbl.; Apples and Potatoes, 150 lbs. per bbl., and 50 lbs. per bushel in bags or baskets; Mackerel and Shad, 320 lbs. per bbl.

Wheat, 60 lbs.; Rye and Corn, 56 lbs.; Barley, 48 lbs.; Buckwheat, 45 lbs.; Oats, 30 lbs.; per bushel.

Packages of Butter weighing less than 50 lbs., will be rated at 50 lbs. each.

†Charcoal, in bulk, if dry, at 14 lbs. per cubic foot, or 23 lbs. per bushel.

†Stone, entirely unwrought, 4000 lbs. per cubic yard.

No allowance will be made for damage to any article, unless notice thereof is given before it is received by the Consignee.

All articles, the bulk of which renders it necessary to be shipped in open Cars, will be taken by special contract as to price and risk of damage, and the contract must be in writing.

All property will be subject to a charge for necessary cooorage.

A Statement of the rates of Storage, Conditions, and manners of receiving and shipping goods and merchandise, may be seen on application to the respective Freight Agents at the several Stations.

The Corporation reserves the right to change any of the above rates, classes, or conditions, at their pleasure.

Terms, cash on delivery.

RATES OF TOLL IN CENTS PER 100 POUNDS.

Names of Principal Freight Stations.	Distance from New York. Miles.	Rates between New York and several Stations.			
		1st Class.	2d Class.	3d Class.	4th Class.
Pier, (barges to N. Y.)	24	10	8	6	4
Piermont	25	14	11	9	7
Suffern	41½	17	14	11	8
Turner's	57	21	16	13	10
Monroe	59½	21	17	13	10
Oxford	62	22	17	13	10
Newburg	65	26	20	15	12
Chester	65	22	18	14	10
Goshen	69½	23	18	14	11
Middletown	76¾	24	19	15	11
Delaware	98	29	22	17	13
Narrowsburg	132	36	28	21	16
Deposit	186½	46	36	27	21
Susquehanna	202	50	38	28	22
Binghampton	224½	54	41	31	24
Owego	246½	58	45	33	26
Elmira	283	66	50	37	29
Corning	300¾	69	53	39	31
Hornellsville	341½	77	59	43	34
Cuba	392½	88	67	48	38
Olean	404¾	90	68	50	39
Dunkirk	469¾	100	75	55	40

Names of Principal Stations.	Distance from Dunkirk. Miles.	Rates between Dunkirk and several Stations.			
		1st Class.	2d Class.	3d Class.	4th Class.
Olean	64½	24	19	14	10
Cuba	77	27	21	15	11
Hornellsville	127¾	37	28	21	16
Corning	168½	45	34	25	19
Elmira	186½	48	37	27	21
Owego	223¾	56	42	31	24
Binghampton	244¾	60	46	33	26
Susquehanna	267¾	65	49	35	28
Deposit	282¾	68	51	37	29
Narrowsburg	337¼	79	60	43	34
Delaware	371¼	85	65	46	37
Middletown	392½	90	68	49	38
Goshen	399¾	91	69	49	39
Chester	404¾	92	70	50	39
Newburg	407¼	96	73	52	40
Oxford	407¼	93	70	50	40
Monroe	409¾	93	70	50	40
Turner's	412¾	94	71	51	40
Suffern	427½	97	73	52	40
Piermont	444¼	99	75	54	40
Pier	445¼	99	75	54	40
New York	469¾	100	75	55	40

From November 1st, to April 15th, Ten per cent. will be added to these rates.

ENUMERATION AND CLASSIFICATION OF ARTICLES.

All articles not enumerated will be charged first class rates.

This character † refers to articles carried at estimated weights.

This character * refers to articles in the Third Class which are carried at Fourth Class Rate, in specified quantities.

First Class.

Apples, green.
Baskets, double weight, Batting, cotton, Blinds Berries, Bonnets, Books, Boots and Shoes, Bread Brushes and Brooms, Buffalo Robes, Bacon, loose, Beeswax, Beans and Peas, green, Bottles, empty, Boxes and Barrels, empty.

† Cabinetware, boxed, at owner's risk, Codfish, in bundles, Candies, in boxes, Cards Cotton and Wool, † Chairs, boxed, Cotton waste, in sacks or bales, Copper and Brass vessels, Carpetings, Cigars, Cigar Boxes in cases, † Carriages, well boxed, owner's risk, Clocks and Weights, Cradles and Baskets, double weight, Cork, Covers and Sieves, Cocoa Nuts, † Cattle and Calves, Caps, Cassia, Cultivators, Camphene, at owner's risk of leakage.

Dry Goods, boxes and bales, Drugs, in boxes, Demijohns, empty, double weight, Deer Skins, loose in bundles.

Feathers and Furs, owner's risk, Furniture, old, loose, 1500 lbs. cart load at owner's risk, Fruit, green, at owner's risk, Figs, Flax, in bales, covered, Fish, fresh, at owner's risk, † Furniture, new well boxed, Fowls, in coops, one and a half weight.

Game at owner's risk, Garden Seeds, Glassware at owner's risk of breakage, Grapes, Glass, window, over 12 x 20, owner's risk.

Hair and Moss, upholster's, in sacks, Hats and Caps, Harnesses and Saddles, Hams, loose, † Hogs and Pigs, Hollow ware, Honey, † Horses and Mules.

Indigo, Ink, in boxes, at owner's risk of breakage.

Lemons and Oranges, packed, Looking Glasses, owner's risk of breakage, Leather, loose, going West, † Live Stocks of all kinds.

Machinery, well boxed, at owner's risk, Marble, wrought, at owner's risk of breakage, Mats and Rugs, Measures and Tubs, in nests, Medicines, owner's risk, Musical Instruments, Moss, in sacks, Muskets, and other fire arms, Melons and Cucumbers at owner's risk.

Nuts, in bags.

Oysters, in kegs or cans.

Paper Hangings, in bundles, Palm Leaf, in bales, Paper and Stationery, Peaches, in baskets, prepaid, at owner's risk, Pianofortes, 1,200 lbs., owner's risk, † Pigs, Pelties, Ploughs, Pumps, Pine Apples, at owner's risk, Porter and Ale, in glass, Plaster Paris Casts, owner's risk, Poultry, at owner's risk, Powder, not taken under any circumstances.

Quinces, at owner's risk.

Rattan.

Saddlery, Scale and Scale Beams, † Sleighs, well boxed, Shingles, loose, † Sheep and Lambs, Soap, fancy, Soda Water, Spirits of Turpentine, at owner's risk of leakage, Stove Pipe, Stove Furniture, at owner's risk, Stoves, mounted, at owner's risk, Straw Goods, Stove Plates, at owner's risk, Starch, Sweet Potatoes, Spices, ground.

Tinware, Trunks, Trees and Shrubbery, at owner's risk, Toys, boxed, Tea, Twine.

Umbrellas, boxed.

Veneering, Varnish, Veal and Lamb, dressed, at owner's risk, Venison, at owner's risk.

Waggons, children's, double weight, Waste, in sacks or bales, Wine, in boxes or baskets, Whips, boxed, Wadding, Wicking, Waggons and Carts, common, in pieces, Wheelbarrows, Whalebone, Wooden ware, Wool, in sacks, going West, Willow ware, double weight.

Yarn.

Second Class.

Alcohol, in bbls., Ale and Beer, in casks, Axes, Axletrees, iron, not car axes.

Bacon and Hams, in casks, going West, Bags and Bagging, in bales, Bells, Brimstone, Beef, fresh, at owner's risk, † Beef, salted, in bbls., going West, Blankets, in bales, Burlaps, Binder's Boards, Broom Corn, pressed in bales, Boilers for engines, Brandy, Gin and Rum, in wood, Bulk Meat, Butter, Beans, in bags or bbls.

Cannon, Canvass, Candles, Cranberries, Carts and Waggons, common in pieces, closely packed in lots of five or more, Chair and Turned Stuff, Clover Seed, Coffee, Copper, plate, sheet and bolt, Copper, pig, wire, rods and nails, Crockery, boxes and bbls., Currants in bbls. or casks.

Deer Skins, closely packed in bales, Domestic Shirtings, and Sheetings, in bales, Dried Apples and Peaches, Dried Fruits, Domestic Woollen Goods, going East on manufacturer's account, Drugs and Dyewoods, in bbls. or bags.

Eggs, at owner's risk, Earthen and Stone ware.

Fish, pickled, dried, salted or smoked, Flax or Grass Seed, Forks, Hay and manure.

Glass, window, under 12 x 20, owner's risk, Glue and Gum, Groceries, not enumerated in other classes, Grass Seed, Gunny Bags.

Hair, Saddler's and Plasterer's, Hardware, Hops, Hemp, in bales or bags, at owner's risk, Hoofs and Horns, Herrings, in boxes or kegs, Hides, dry, less than 100, Hoes, Hay and Straw, pressed in bales.

Iron Safes, Iron, hoop, band and sheet

Lead, in pipe, bars, pig and sheet, Leather, in rolls or boxes, Liquors, in casks or bbls., at owner's risk of leakage.

Moss, in bales, Mahogany and other Foreign Wood of value, Marble, unwrought, in slabs, at owner's risk.

Nuts, in bbls., Nail Rods.

Oakum, Oil Cloth, Oils, at owner's risk of leakage, Oysters and Clams, in shell, at owner's risk, prepaid.

Paints and Dye Stuffs, Paper, Printer's, Paper Hangings, in boxes, Pasteboard, Pickles and Cucumbers, in casks, Pork and Mutton, fresh, at owner's risk, † Pork, salted, in bbls. going West, Peas, in bags or bbls.

Rope, Rags, at owner's risk of fire and wet, Rice, Raisins.

Straw Paper, Scales and Scale Beams, boxed, Scythes and Snaths, Shot, in bags, Saleratus, Soap, common, in boxes, Sheep Skins, in bales, Spelter and Zinc, in pigs, Stoves and Stove Plates, by the car load, on manufacturer's account, at

owner's risk, Shovels and Spades, Stove Plates, boxed.

Tobacco, in bales, Tow, pressed, Type, Tobacco, manufactured, going West.

Water, mineral, Wood, in shape, Wool, pressed in bales, Wines, in casks or bbls., at owner's risk of leakage, Whiskey; going West, at owner's risk of leakage.

Third Class.

Acids, Pyroligenous, in casks, * Anchors, Anvils, * Ashes, dry, house and leached, * Ashes, Pot and Pearl, Axes, going East on manufacturer's account.

* Bacon, in casks, * Bleaching Powders, in casks or bbls., * Bacon, in casks or boxes, going East, † * Beef, salted in bbls., going East, * Bark, Tanners, Bones, * Bran or Feed, in bags or bbls., * Brick or Building Stone, to Pier only, * Burr Blocks, * Barilla.

† Charcoal, to Pier only, Cheese, in boxes or casks, at owner's risk of weather, Cider, * Clay, Marl and Sand, to Pier only, * Coal, Mineral, to Pier only, Codfish, in hhds. and boxes, Crockery, crates and hhds., Copper, Ore, * Cotton, in bales, * Cement, in bbls., * Chain Cables, Copper in boxes, * Chalk, * Car Wheel and Car Axles.

Dye Wood in sticks, Domestic Cotton Goods, on manufacturer's account going East.

* Earths and Manures, to Pier only.

† * Fire Wood, Posts and Rails, * Flour or Meal, in bags, † Flour and Meal, in bbls.

† * Grain of all kinds, in bags, * Grain of all kinds, in bbls., * Gypsum, Guano, Grindstones.

Hemp, Manilla, in bales, Hemp Yarn, in reals, * Heading and Staves, Hides and Skins, green, Hides, dry, in bales, Hog's Hair, in bales, * Hoops, and Hoop Poles, owner to load and unload.

* Iron, bloom, bar, scrap, pig, boiler, and railroad, * Iron Castings, plain and heavy, not machinery, * Iron Ore,

* Junk, Joiner's Work.

* Lard and Lard Oil, in bbls. and kegs, * Lath, actual weight, * Lead, in pigs or bars, going East, Leather, undressed, in boxes or rolls, going East, * Lime, in bbls. or casks, * Lime, in bulk, Locomotive Engines.

* Mill Stones, Molasses, * Marble and Stone, unwrought, in blocks, Mahogany, in log.

* Nails, Spikes and Bolts.

Oars, at owner's risk, to Pier only, owner to load and unload, * Oil Cake, in casks.

* Plaster, † * Pork and Beef, salted in bbls., going East, † * Potatoes and similar roots in bags or bbls., * Pitch.

Railroad Cars, * Rosin, Rigging.

* Salt, Saltpetre, * Soda Ash, * Shingles, in bunches, actual weight, Starch, in bbls., on manufacturer's account, Sugar, hhds., bbls. and boxes, Shot, in kegs, * Steel, in boxes, bundles or bars, Steel Springs, going East on manufacturer's account, Sumac, † * Stone, unwrought.

* Tallow, in bbls., * Tar, Tin, * Tobacco, in hhds. or boxes, unmanufactured, Tobacco manufactured, going East.

Vinegar.

* Whiting, * Whiskey, going East, Wire.

* Zinc, in casks.

Fourth Class.

Anchors, 10 tons, Ashes, leached, 10 tons, Ashes, Pot and Pearl, 10 tons.

Bacon and Hams, in casks, 10 tons, † Beef and Pork, salted, in barrels, 10 tons, Burr Blocks, 10 tons, Barilla, 10 tons, Bleaching Salts, 10 tons, Bark, ground, in bags or casks, Bark, Tanner's, 10 tons, Brick and Building Stone, to Pier only, owner's to load and unload, 10 tons.

Chain Cables, 10 tons, Chalk, 10 tons, Coal, Mineral, 10 tons, to Pier only, Cement, 10 tons, Clay, 10 tons, Car Wheels and Axles, 10 tons, Cotton, in bales, 10 tons.

Earth and Manure, 10 tons, to Pier only.

† Flour, 100 bbls., Flour, in bags, 10 tons, Fish, salted, in bbls., 25 bbls., † Firewood, 10 tons, to Pier only, Feed, in bags, 10 tons, Feed, in bbls., 100 bbls.

† Grain, in bags, 10 tons, Grain, in bbls., 100

bbls., Gypsum, 10 tons, to Pier only, Guano, 10 tons, Grindstones, 10 tons.

Heading and Staves, 10 tons, Hoops and Hoop Poles, 10 tons.

Iron, bar, pig, scrap, bloom, bolt, shapes, boiler and railroad, 10 tons, Iron Ore, 10 tons, Iron Castings, heavy, not liable to damage, 10 tons.

Junk, 10 tons.

Lime, in casks, 10 tons, Lime, in bulk, to Pier only, owner to load and unload, 10 tons, † Lumber under 25 feet long, to Pier or Newburg, 10 tons, Lath, 10 tons, Lead, pig and bar, 10 tons, Lard and Lard Oil, in bbls., 10 tons.

Marble, unwrought, in blocks, 10 tons.

Nails, 10 tons.

Oil Cake, in casks, 10 tons.

† Potatoes, in bbls., 100 bbls., Pitch, 25 bbls., Plaster, 10 tons, owner to load and unload, Posts and Rails, 10 tons, owner to load and unload.

Rosin, 25 bbls.

Spikes, common, ship and railroad, 10 tons, † Stone, unwrought, 10 tons, Steel, in boxes, 10 tons, Sand, 10 tons, to Pier only, † Salt, in bbls. or bags, 10 tons, Soda Ash, 10 tons, Shingles, 10 tons, Shooks, 10 tons.

Tallow, in casks, 10 tons, Timber under 25 feet long, 10 tons, Tobacco, unmanufactured, 10 tons, Tar, 25 bbls.

Whiskey, 10 tons, Whiting, 10 tons.

Zinc, 10 tons.

RATES FOR HIDES AND SOLE LEATHER.

Dry Hides sent from New York, and Sole Leather sent to New York, when taken in quantities of 100 or more Hides or Sides, at one time, will be charge by the piece as follows:

Shippers of Hides and Leather are required to mark each Hide (dry) or Side of Leather with paint or brand. This rule is found necessary to avoid errors in delivery.

From and to	Per Side to N. Y.	Per Hide from N.Y.
Suffern and all stations between Suffern and New Hampton.....	3	4
Middletown.....	3½	4½
Delaware.....	3½	4½
Narrowsburgh.....	4½	5½
Deposit.....	5½	7
Susquehanna.....	6	8
Binghamton.....	6	8
Owego.....	6½	8½
Elmira.....	7½	9½
Corning.....	7½	10
Hornellsville.....	8½	11
Cuba.....	9½	12
Olean.....	9½	12½
Dunkirk.....	11½	13

RATES FOR WELL SEASONED PINE AND HEMLOCK BOARDS AND PLANK NOT MORE THAN 25 FEET LONG, PER M. FEET, D. M. IN LOTS OF 10 TONS OR MORE, AT ANY ONE TIME.

If only partially seasoned, 10 per cent., and if green, 20 per cent. will be added to these rates. For pine and hemlock logs and timber not more than 25 feet long, fifteen per cent. will be added to these rates.

	Owners to load and the RR Co. to unload.	Owners to load and unload.
	To Pier.....	To Newburg.....
From Dunkirk.....	\$8 80	\$8 52
" Olean.....	7 70	7 42
" Cuba.....	7 42	7 15
" Hornellsville.....	6 43	6 16
" Corning.....	5 50	5 22
" Elmira.....	5 50	5 22
" Owego.....	4 84	4 56
" Binghamton.....	4 40	4 12
" Susquehanna.....	4 01	3 74
" Deposit.....	3 67	3 30

To determine the contents of each car when

loaded with lumber, it will be measured by solid or cubic feet. Each cubic foot will be estimated to contain 10 superficial feet or B. M. In all cases, where lumber of different lengths is loaded promiscuously on the same car, the whole load will be estimated to be of the length of the longest on said car; but when loaded separately, the actual dimensions of each length will be taken. Planed lumber, joist, scantling and plank, exceeding two inches in thickness, will be estimated to contain eleven feet B. M. to each cubic foot.

On Norway or Yellow Pine, not more than 25 feet long, from and to Stations named in the above table, 25 per cent. will be added to the stated rates in said table.

Lumber of all kinds, not more than 25 feet long, headings and Staves, shooks, Tanners bark, shingles and hoop poles, (which must be tied up in bunches,) in quantities of 10 tons or more, to or from stations not named above, will be taken at fourth class rates, to be loaded and unloaded by the owner, and estimated to weigh as follows:

†Firewood, posts and rails, if dry, at 4000 lbs. or if green, at 4500 lbs. per cord.

†Tanner's bark, if dry, at 2000 lbs. per cord.

†Pine and hemlock boards, planks and scantling if well seasoned, at 2500 lbs. or if not well seasoned, at 2750 lbs.; if green, at 3000 lbs. per M. feet, B. M.

†Norway or yellow pine, dry, 3,000 lbs.; partly dry, 4,000 lbs.; if green, 5,000 lbs. per M. feet, B. M.

†Ash, maple and cherry, if dry, 3500 lbs. or if not dry, 4000 lbs. per M. feet, B. M.

†Oak and walnut, if well seasoned, 4000 lbs.; if not well seasoned, 5000 per M. feet, B. M.

†Green basswood boards 3000 lbs.; if dry, 2500 lbs. per M. feet B. M.

Timber and spars over 25 feet long, will be carried at special prices, to be agreed upon between the General Freight Agent or Lumber Freight Agent and the owner.

Ship timber, staves, heading and hoop poles, will be charged for at actual weights.

Lumber must be removed from Piermont pier within five days after notice of its arrival has been given to the consignee, or twenty cents per M. feet B. M., will be charged for each day that it remains there more than five days after such notice. The want of room to store it at the pier, renders this rule necessary, and the Agent there will be required to enforce it rigidly.

REDUCED RATES FOR HORSES, CATTLE, SHEEP, LAMBS, HOGS, AND OTHER LIVE STOCK PER CAR LOAD OF NOT MORE THAN TEN TONS, WHEN TAKEN ENTIRELY AT OWNER'S RISK, BETWEEN THE STATIONS NAMED AND NEW YORK, PATERSON AND NEWBURG, THE OWNER OR DRIVERS, ONE TO EACH CARLOAD, TO ATTEND TO THEIR STOCK, WILL BE CARRIED FREE, BUT AT THEIR OWN RISK OF PERSONAL INJURY FROM ANY CAUSE WHATSOEVER:

From	To New York.	To Newburg.
Dunkirk	\$90 00	\$84 00
Olean	83 00	77 00
Cuba	81 00	75 00
Hornellsville	70 00	64 00
Painted Post and Corning	66 00	60 00
Elmira, Wellsburg and Chemung	65 00	59 00
Owego and Campville	62 00	56 00
Binghamton and Great Bend	60 00	54 00
Susquehanna	59 00	53 00
Deposit	58 00	52 00
Narrowsburg	50 00	44 00
Delaware	44 00	38 00
Middletown	32 00	26 00
New Hampton	28 00	22 00
Goshen	24 00	18 00
Chester, Oxford and Monroe	20 00	14 00
Turner's and Greenwood	16 00	10 00

LIVE STOCK.

In quantities less than a car load, will be taken at the following estimated weights, at first class rates:

+1 Horse or horned animal will be rated 2,000 lbs.
 +2 Horses or horned cattle " " 3,500 "
 +3 Horses or horned cattle " " 5,000 "
 + (Any excess over 5,000 lbs., and less than a car load, at actual weight.)

+Calves not more than three months old.. 150 lbs.

+Sheep

+Lambs

+Pigs and store Hogs

(Calves over three months old, actual weight.)

A deduction will be made from the above named prices per car load, for Cattle, Horses, Hogs, Pigs, Sheep, Lambs, Calves, or other live stock, if taken off at the following stations, viz: At Delaware, or Narrowsburg, \$8; at Middletown, \$6; at Goshen or Chester, \$5; at Sufferns, or any other point on the Railroad east of that station, \$3.

MOVEMENT OF FREIGHT TRAINS—EASTWARD BOUND.

Slow Freight.		Miles.
Monday, leaves Dunkirk	6.20 A. M.	
" Olean	2.10 P. M.	64½
arrives at Hornellsville	9.52 "	
Tuesday, leaves Hornellsville	7.00 A. M.	127¾
" Corning	12.07 P. M.	168¾
" Elmira	2.22 "	186¾
arrives at Owego	6.33 "	222¾
Wednesday, leaves Owego	6.05 A. M.	
arrives at Susquehanna	12.00 M.	
Thursday, leaves Susquehanna	4.00 A. M.	267¼
" Deposit	5.44 "	282¾
" Narrowsburg	12.27 P. M.	337¼
arrives at Delaware	3.45 "	371¼
Friday, leaves Delaware	2.00 "	
arrives at Pier	10.47 "	445¼

Fast Freight.		Miles.
Monday, leaves Dunkirk	12.30 P. M.	
arrives at Hornellsv.	11.52 "	127¾
Tuesday, leaves Hornellsville	4.00 A. M.	
arrives at Susquehanna	6.00 "	267¼
Wednesday, arrives at Delaware	4.15 A. M.	371¼
leaves Delaware	6.00 "	
arrives at Piermont	1.35 P. M.	445¼
From Piermont to New York by river in barges.		
Distance 24 miles.		

WESTWARD BOUND.		Miles.
Slow Freight.		
Monday, leaves Piermont	4.00 P. M.	
arrives at Delaware	11.30 "	74
Tuesday, leaves Delaware	8.00 A. M.	
arrives at Susquehanna	9.50 P. M.	178
Wednesday, leaves Susquehanna	1.15 "	
arrives at Owego	6.47 "	222½
Thursday, leaves Owego	6.45 A. M.	
arrives at Hornellsville	6.15 P. M.	317
Friday, leaves Hornellsville	7.15 A. M.	
arrives at Dunkirk	7.40 P. M.	445

Fast Freight.		Miles.
Monday, leaves Piermont	6.00 A. M.	
arrives at Delaware	1.20 P. M.	74
Tuesday, leaves Delaware	6.00 A. M.	
arrives at Susquehanna	4.55 P. M.	178
Wednesday, leaves Susquehanna	6.00 A. M.	
arrives at Hornellsville	8.00 P. M.	317
leaves Hornellsville	10.00 "	
Thursday, arrives at Dunkirk	10.30 A. M.	445
Average load for the same engine on each Division:		
Piermont to Delaware	74 miles.	14 cars.
Delaware to Susquehanna	104 "	25 "
Susquehanna to Hornellsville	139 "	40 "
Hornellsville to Dunkirk	128 "	16 "

By these conditions and charges, it will be seen that local freight, in the summer, for the first 100 miles from New York, including shipment from New York to Piermont, costs as follows:

First class.. 5.9 cts. per ton of 2000 lbs. per mile.
 Second class.. 4.5 " " " "
 Third class.. 3.47 " " " "
 Fourth class.. 2.65 " " " "

For the first 200 miles from New York:
 First class..... 4.95 cts. per ton per mile.
 Second class..... 3.76 " " "
 Third class..... 2.77 " " "
 Fourth class..... 2.16 " " "

For the first 300 miles from New York:
 First class..... 4.6 cts. per ton per mile.
 Second class..... 3.52 " " "
 Third class..... 2.59 " " "
 Fourth class..... 2.06 " " "

Through freight:
 First class..... 4.26 cts. per ton per mile.
 Second class..... 3.14 " " "
 Third class..... 2.34 " " "
 Fourth class..... 1.7 " " "

Through freight, between November 1st and April 15th:

First class..... 4.69 cts. per ton per mile.
 Second class..... 3.45 " " "
 Third class..... 2.57 " " "
 Fourth class..... 1.87 " " "

Through winter rates, per article of heavy freight, in lots of 10 tons and over. Distance 469½ miles:

Flour, per bbl. 88 cents.
 Beef and Pork, per bbl. 141 "
 Wheat, per bushel

ping paper, yarn pressed in bales, hogs' hair and bristles.	0 60	"	"
Butter, cheese, and eggs in barrels, (at owner's risk,) hemp in bales, (at owner's risk,) starch in boxes and barrels (on manufacturer's account.)	0 60	"	"
Beans and peas, unmanufactured leather in boxes and rolls....	0 50	"	"
Ground bark in casks, grain and flour in bags, lard oil, linseed oil, lard in barrels and kegs, cracklings, oil cake, sausage, skins, bacon, hams, tobacco, cotton in bales, tallow and grease in casks and barrels, potash, pearlsh.....	0 44	"	"
Beef, pork, and pickled meats in bbls. and tcs., domestic spirits.....	0 44	"	"
Flour in lots of 50 bbls. or more	1 00	per	barrel.

Cleveland and New York City Railroad.

The following gentlemen were chosen Directors of this projected road on Friday: Cleveland, E. G. Williams, H. W. Clark, J. A. Morley; Painesville, Uri Seeley, R. Hitchcock; Madison, W. W. Branch; Ashtabula, Frederick Carlisle.

Saturday evening Ellery G. Williams, of this City, was unanimously elected by the Directors as President, and W. H. Stanley, Secretary and Treasurer.

\$417,000 Stock has already been subscribed in this City, and adjoining counties, and from the high character of the Directors and the President, for enterprize and experience in railroad matters, the prospects of the road are every way encouraging.

The road will form a connection with the other six feet gauge roads contemplated to Cincinnati and St. Louis, and with New York and Erie Road, and is an important connection of our City.—*Cleveland Herald.*

Louisville and Sandusky Railroad.

This Company has been organized by the choice of the following officers, viz: Directors, E. Cooke, J. A. Camp, A. A. Harbisson, Robt. Young, J. P. Williamson, George Nishwitz, and Alfred Denny. The officers are, President, E. Cooke; Secretary, Wm. Elliott; Treasurer, Robert Young; Chief Engineer, T. R. Jones.

The line of the proposed road extends from Sandusky, on Lake Erie, to New Albany, opposite Louisville, Ky. It connects with the Mad River R. R., at Huntersville, and will be extended thence in a south westerly direction, via Piqua, Milton, and Eaton, to the Indiana State line where a junction will be formed with the New Albany and Sandusky city Junction Railroad.

Georgia.

The estimated cost of the Western and Atlantic road is placed at \$5,059,331. The action of the legislature has been adverse to the sale of this work to individuals.

Kentucky Statistics

We gather the following items of taxation in that State, for 1853: 20,667,448 acres of land, valued at \$166,857,626; 38,119 town lots, valued at \$44,859,205; 199,949 slaves, valued at \$79,462,188; 331,211 horses and mares, valued at \$15,186,216; 57,671 mules, valued at \$3,300,981; 2,917 jinnies, valued at \$311,334; 607,876 cattle, valued at \$3,848,643; 4,268 stores at \$10,978,487. Value under the equalization law \$44,948,519. Total valuation \$366,752,852, and increase of 88 millions over the valuation of 1852.—The tax on this and on the pleasure carriages, watches, plate, pianos, &c., makes a total revenue of \$646,024 46. The total number of white males over 21 years old is 162,477, total number of children between 6 and 18, 219,239.

Taunton and New Bedford Railroad.

The receipts of the New Bedford and Taunton Railroad Company for the year ending November 30, 1853, have been as follows: Amount received for transportation of passengers, \$74,135 31; of merchandise, \$34,970 22; of mail, \$5,878; of Taunton Branch Railroad Corporation, \$8,544 02; sundry receipts for expresses, &c., \$3,079 61—total \$122,602 16. The expenditures for the same time have been as follows:—Repairs of road, \$15,305 48; do. of engines and cars, \$12,979 89; fuel, oil, salaries, &c., \$47,477 66—total \$75,763 03. Net earnings after deducting expenses, \$46,839 13. There have been declared two dividends during the year, amounting to \$35,000. Total surplus not divided \$30,916 41.

Knoxville and Kentucky Railroad.

The stockholders of the Knoxville and Kentucky Railroad Company met at Knoxville on the 8th of Feb'y. A sufficient amount of stock having been subscribed, the stockholders elected the following persons directors of the company, viz: Thos. C. Lyon, Wm. G. Swan, P. Dickinson, C. M. McGhee, A. L. Maxwell, O. P. Temple, C. H. Coffin, John H. Crozier, Wm. H. Snead, and Jos. L. King. The board of directors then organized by electing John H. Crozier president and O. P. Temple secretary and treasurer.

Naugatuc Railroad.

The following is a statement of the receipts and expenses of the Naugatuc Railroad for the past year. The receipts show a large increase, and the net earnings are greater than any previous year, notwithstanding the heavy losses by the recent floods. The statement is as follows:

Receipts for the year 1853.....	\$246,687 43
Expenses.....	122,059 25
Total.....	\$124,628 18
Less State taxes.....	3,036 49
Net earnings.....	\$121,591 69
Net earnings 1852.....	113,466 50

Increase of net earnings over 1852...\$8,125 19

Commerce and Tonnage of Boston and New York.

From recent published statistics it appears that the tonnage of the port of New York surpasses that of the ports of London and Liverpool combined. That of Boston is about one-half of the tonnage of New York, and these two cities wield over one-half of the total navigation of the United States. The great excess of the tonnage of New York over Boston consists in its immense fleet of European packets and of ocean and inland steamers. In many great branches of commerce, such as the East India, African, Pacific, South American and Mediterranean trade, Boston has the largest tonnage employed. The city of Philadelphia is now importing many dry goods in her new lines of steamships to England, and her trade in this branch is rapidly growing. But, with this exception the great commercial transactions of the country mostly centre at New York and Boston, and all other ports are very limited and contracted in the sphere of their commercial operations. The wealth of these two cities now amount to nearly seven hundred millions of dollars, which enables them to control all the great commercial and monetary interests of the country, thus rendering all other cities in some degree tributary to them. The tonnage of Boston was never increasing faster than at present, probably at the rate of more than 10 per cent a year. Not a ship-yard in New England is without a ship, building for some Boston house, and in many places all that are building are to come here.

To Civil Engineers and Surveyors.

TRANSITS, Level and Surveyors' Compasses Manufactured on the most improved principle and of the Best Quality by THOMAS HUNT, No. 53 Fulton Street, New York.

1y10*

SHANAHAN & LOEBER,

181 William-st,
(1st floor-Up Stairs.)
NEW-YORK.

MANUFACTURERS OF

THEODOLITES, TRANSITS, LEVELS,
Surveyors' Compasses, Drawing Instruments,
Chains, Scales, Levelling Rods, &c. 1y10

To Railroad Contractors.



OFFICE PITTSBURGH AND CONNELLSVILLE }
RAILROAD COMPANY. }

SEALED proposals will be received at the office of this Company, at Neville Hall, in the City of Pittsburgh, until 5 o'clock p. m., of Wednesday, the 22d day of March next, for the Graduation and Masonry of that part of the Pittsburgh and Connelville Railroad extending from West Newton, in Westmoreland Co., to Connelville, in Fayette Co., this State, a distance of 25 miles. This work is generally of a very light character. It will be divided into sections of about 1 mile each. Proposals will be received for one or more sections.

Proposals will also be received until the same time for the making of the Tunnel at the Sand Patch Summit, on the Alleghany Mountains, about 25 miles from Cumberland.—This Tunnel is to be forty-one hundred feet in length, through rock. The work is worthy the attention of the best contractors. It is an excellent region to do work cheaply.

Maps, Profiles and Specifications will be ready for the examination of bidders on and after the 6th day of March next, and all proper information given on application to Oliver W. Barnes, Chief Engineer, or the Assistant Engineers on the line.

Satisfactory testimonials will be expected from Contractors not known to the Company. By order of the Board.

W. LARIMER, Jr., President,
Pittsburgh & Connelville R. R. Co.

THE

New Yorker Handels-Zeitung

A GERMAN Commercial Paper, containing Prices Current, Market Reports, Exchange and Stock Rates, Shipping List and Correspondence from all parts of the world, appears twice a week in two separate editions, viz: one for home circulation, published each Wednesday and Saturday morning; the other for circulation in Europe, Belgium, Holland, Denmark, Sweden, &c.—the only German Paper published in the United States admitted to the German States—appears before the departure of each mail steamer for Europe. Terms:—The paper, per annum, at New York, \$5. Advertisements taken at liberal terms.

Duggan's Work on Bridges.

SPECIMENS OF THE

STONE, IRON AND WOOD BRIDGES,
VIADUCTS, Tunnels, Culverts, etc., of the United States Railroads; illustrated by a series of drawings, from actual measurement of the works; including plans, sections, elevations, and details of each structure, and an appendix, illustrative of the art of bridge building, as at present practiced in Europe.

Illustrated With Numerous Accurately Engraved Drawings.

15 Numbers, 75 Cents, each.

**A few sets of the above work, may be had by applying to the subscriber.

JOHN WILEY, 167 Broadway.

Railroad Companies and Contractors,

WANTING first rate German or Irish laborers for railroads and canal work, or mechanics of any kind, will find the undersigned a first rate office to give their orders to, as thousands of emigrants apply to them every season for employment. Reference will be given to well known companies and contractors.

MORRIS & COHNERT,
European, American Employment Office,
1t 287 Broadway, corner Reade-st.

M. W. BALDWIN & CO., Engineers,

Broad and Hamilton streets, Philadelphia.
WOULD call the attention of Railroad Managers, and those interested in Railroad Property, to their **SYSTEM OF LOCOMOTIVE ENGINES** in which they are adapted to the particular business for which they may be required; by the use of one, two, three or four pair of driving wheels; and the use of the whole, or so much of the weight as may be desirable for adhesion; and in accommodating them to the grades, curves, strength of superstructure and rail and work to be done.—By these means the maximum useful effect of the power is secured with the least expense for attendance, cost of fuel and repairs to Road and Engine. With these objects in view and as the result of twenty-three years practical experience in the business by our senior Partner we manufacture *five different kinds of Engines* and several classes or sizes of each kind.

Particular attention paid to the *strength of the machine in the plan and workmanship of all the details.* Our long experience and opportunities of obtaining information, enables us to offer these engines with the assurance that in efficiency, economy and durability they will compare favorably with those of any other kind in use.

We also furnish to order, Wheels, Axles, Bowling Tire (to fit centres without boring), Composition Castings for Bearings; every description of Copper Sheet Iron and Boiler work; and every article appertaining to the repair or renewal of Locomotive Engines.

M. W. BALDWIN. MATTHEW BAIRD.

Notice to Contractors.

SEALED PROPOSALS will be received at the Office of the undersigned in Indianapolis until the 15th day of March next, for the Grading, Masonry and Bridging of that portion of the Indiana and Illinois Central Railway, between the West line of Edgar County and Decatur Illinois, being for a distance of about 53 miles.

The Map and Profiles together with the Plans and Specifications, will be ready for inspection at the Office of the Company in Decatur on and after the 1st day of March.

Any further information may be obtained at the Office of the undersigned in Indianapolis.

M. C. STORY & CO.

Indianapolis, February 7th, 1854.

C. Floyd-Jones.,

Division Engineer 3d and 12th Divisions.
 ILLINOIS CENTRAL RAILROAD.
 Vandalia, Ill.

**Boiler and Tank Rivets,
 Nuts and Washers;
 Bolts and Bolt Ends**

All Sizes of
 for Sale by
 BRIDGES & BROTHER,
 64 Courtland st., N. Y.

To Railroad and Canal Co.'s, Contractors, &c.

THE undersigned would direct the attention of Chief Engineers and Contractors to the facilities they possess for supplying them with laborers, mechanics, &c. of any description, and also to inform them that they forward such men to whatever destination they may be required.

Companies or Contractors desirous of receiving steady and industrious men, will be promptly supplied at the shortest possible notice.

JOHN J. HELLING & CO.
 No. 85 Greenwich street, New York.

New York and Erie R. R.

PASSENGER TRAINS
 leave Pier foot of Duane street,
 as follows, viz:—

BUFFALO EXPRESS, at 7 a. m. for Buffalo direct, over the N. Y. & E. R. R., and the B. & N. Y. City R. R., without change of baggage or cars.

MAIL, at 8 1/2 a. m. for Dunkirk and Buffalo, and intermediate stations. This train remains over night at Elmira, and proceeds the next morning.

WAY EXPRESS, at 12 1/2 p. m. for Dunkirk, and intermediate stations.

ACCOMMODATION, at 3 p. m. for Delaware and intermediate stations.

NEWBURG EXPRESS, at 4 p. m., for Newburg.

WAY PASSENGER, at 4 p. m., for Piermont and intermediate stations.

NIGHT EXPRESS, at 5 p. m. for Dunkirk and Buffalo.
 On Sundays only one Express Train—at 5 p. m.

These Express Trains connect at Dunkirk with the Lake Shore Railroad for Cleveland, Cincinnati, Toledo, Detroit, Chicago, etc.
 CHAS. MINOT, Supt.

Railroad Iron.

2000 TONS Railroad Iron, weighing about 50 lbs. per yard, "Erie" pattern of G. L. and "Crawshaw" manufacture, now on the way from the shipping ports in Great Britain to this port, for sale by
 P. CHOUTEAU, Jr., SANFORD & CO.,
 December 4, 1852. No. 51 New street.

To Contractors.

CONSTRUCTION OF THE NORTH SHORE RAILWAY.

THE Directors of THE NORTH SHORE RAILWAY, from Quebec to Montreal will receive tenders for the construction of said Railway or sections thereof from this to the fifteenth day of March next.—For information, &c., apply personally or in writing to the undersigned.

HECTOR L. LANGWIN,
 Sect'y. & Treas. N. S. R. C.

Quebec Feb. 14, 1854. Buade St., Quebec.

OFFICE CINCINNATI, HAMILTON & DAYTON R. R. Co.
 CINCINNATI, Feb. 14, 1854.

THE Directors have this day declared a dividend of Five per Cent. on the capital stock of this Company, payable at the office of the Company in Cincinnati on and after the 25th inst., till which time the Transfer Books will be closed; and at the Ohio Life Insurance and Trust Company's Office in New York, on and after the 15th Proximo. By order of the Board.

FRANK. S. BOND,
 Sect'y.

Passenger Cars for Sale.

TWO first class Passenger Cars, built by one of the best car builders in the country, for the Baltimore and Ohio Railroad.

The above presents a rare opportunity to any Railroad Company wishing first class cars for immediate use.

They will be sold at a bargain for cash or good paper. Enquire at the office of Bridges & Brothers, 64 Courtland Street.
 New York, Feb. 21st, 1854.

Railroad Letting.

PROPOSALS will be received by the undersigned at the Engineer's Office, Dover, Delaware, until March 14th, inclusive, for the Graduation, Masonry and Superstructure of the DELAWARE RAILROAD, extending from the New Castle and Frenchtown Railroad to Seaford, a distance of 70 miles, through a healthy region, and convenient to procure hands and supplies.

The work will be divided into sections of about 4 miles each.

Maps, profiles, and specifications will be ready for the examination of contractors, after the 1st of March.

Bidders personally unknown to the undersigned, will be expected to produce satisfactory evidence of their responsibility.

feb.18-tm14 D. H. KENNEDY,
 Resident Engineer.

**LAWRENCE SCIENTIFIC SCHOOL,
 Harvard University.**

THE next Term of this Institution will open on the second day of March, 1854, and continue twenty weeks.

Instruction by Recitations, Lectures and Practical Exercises, according to the nature of the Study, will be given in:

Astronomy.....	by Messrs. Bond.
Botany.....	" Prof. Gray.
Chemistry, analytical and practical.....	" " Horsford.
Comparative Anatomy and Physiology.....	" " Wyman.
Engineering.....	" " Eustis.
Mathematics.....	" " Pierce.
Mineralogy.....	" " Cooke.
Physics.....	" " Lovering.
Zoology and Geology.....	" " Agassiz.

For further information concerning the School application may be made to Prof. E. N. Horsford, Dean of the Faculty.

Cambridge, Mass., January 1854.

Notice to Contractors.
**EUROPEAN & NORTH AMERICAN RAILWAY
 NEW BRUNSWICK.**

PROPOSALS will be received by the undersigned at his office, Princess street, St. John, N. B., up to the 5th day of April 1854, for the entire construction of that portion of the Eastern Division of the above Railway extending from the crossing of the Road from Scheldiac to Dorchester to the Bend of the Petitcodiac River being a distance of about twelve miles, comprising the Grubbing, Grading, Masonry, Bridging, and the Ballasting and Laying of the permanent Road.

The work will be divided into two sections which being adjacent to others to be proceeded with on their completion, is well worthy the attention of Contractors.

Proposals may be made for one or both sections and with or without the permanent Road and Ballasting.

Plans and Specifications will be ready for the inspection of bidders on and after the 5th day of March at the above office where all other necessary information may be obtained.

W. E. ROSE.

St. John, N. B., 27th Feb'y 1854.

Important to Railway Co's.

A GREAT improvement has recently been perfected in the manufacture of Dumping Gravel Cars by which the cost is materially lessened and the strength and durability much increased.

We have secured the right to manufacture these improved Cars and can supply them at prices ten per cent. lower than the ordinary kind.

Orders directed to the Hamilton Car Co., Hamilton, Ohio, will receive prompt attention.

Knox & Shain,

MANUFACTURERS OF
**LEVELS, TRANSITS AND SURVEYING
 COMPASSES.**

No 72 Dock st. first door south of Walnut, west side
PHILADELPHIA.

First Premium awarded by the Franklin Institute.

Railroad Iron Via Quebec.

JOHN ANDERSON & CO.
 COMMISSION MERCHANTS,
 SHIPPING AGENTS AND BROKERS,
Quebec and Montreal.

PARTICULAR attention given to the Transhipment of Iron &c., in Transit for the Western Lake Ports, and to the Shipment of Rails in Great Britain.
 Quebec, Dec. 2, 1853.

To Contractors.
**PACIFIC RAILROAD OF MISSOURI,
 THIRD AND FOURTH DIVISIONS.**

IT is intended to make contract for the third divisions of this road, (extending from the Missouri river at Jefferson City, passing near Georgetown and Warrensburg, to the Missouri river near Independence, about 160 miles,) so soon after the first of May next, as satisfactory proposals shall be made.

Contract will be made for the whole now offered, or such parts as particular contractors may select in form and quantity to suit the interests of the company. Proposals are asked for by the cubic yard, with cash payments; but contractors may, if they desire, accompany their offer with proposals for two thirds cash and one third in county and railroad mortgage bonds or other securities.

Profiles and maps of approximate location can be seen after first of April next at Pacific Railroad Office, in St. Louis, and any information will be given on application to the Engineer.

The first division of this road is now in operation; the second division to Jefferson City under present course of construction.

The third and fourth divisions now offered pass over a high, rolling mixed prairie and timbered country, and for healthfulness and supply of provisions will compare favorably with any part of the west.

THOS. ALLEN, Pres.

THOS. S. O'SULLIVAN, Chief Eng.

Pacific R. R. Office, St. Louis, Feb. 1854.

Railroad Iron.

1250 Tons Erie Pattern Guest and Co's make, weighing 57 1/4 lbs. per yard, to be shipped from Wales in July and August, for this port—for sale by
BOORMAN, JOHNSTON & CO.,
 90 Broadway, New York.
 June 2, 1853.

Railroad Iron.

THE "Montour Iron Company" is prepared to execute orders for Rails of the usual patterns and weights, and of any required length not exceeding 30 feet per rail. Apply to
THOS. CHAMBERS, President,
 September, 1850.

Railroad Iron.

THE Undersigned, Agents for the Manufacturers, are prepared to contract to deliver free on board at shipping ports in England, or at ports of discharge in the United States, Rails of superior quality, and of such weight or pattern as may be required.
VOSE, PERKINS & CO.,
 9 South William St.
 New York, June 1, 1851.

Railroad Car Works.

THE Undersigned are prepared to manufacture for Railroad Companies, Passenger, Baggage, Cattle, Freight, Gravel and Hand Cars, also Baggage Barrows and Freight Trucks.
F. HUNGERFORD & CO.
 Mayville, Ky., Sept. 29, 1853.

Stuart, Serrell & Co.,**CIVIL ENGINEERS,**

Rooms 22, 24, 26 & 27,
 157 Broadway, New York.

CHARLES B. STUART,
DANIEL MARSH,

EDWARD W. SERRELL,
SAMUEL MCILROY.

Railroad Iron.

3000 TONS superior quality, delivery from April forward, with 5 to 600 tons per month, for sale by
NAYLOR & CO.,
 99 & 101 John street
 1247

Railroad Iron.

5,000 TONS T RAILS, about one-half weighing 59 lbs. per yard and the remainder 56 lbs. per yard now in bond and for sale by
JOHN H. HICKS,
 90 Beaver street.
 24 Feb'y.

**South-Western Car Shops,
Madison, Indiana.**

THE subscriber is prepared to execute orders at short notice, for all kinds of Passenger, Freight and other descriptions of Railroad Cars.

Work delivered at any point accessible by railroad, or by the Ohio and Mississippi rivers.

Facilities for transportation, enable the subscriber to afford peculiar advantages to Companies requiring work delivered in the South and West,
W. CLOUGH.

Refer to

JNO. BROUGH, Esq. **WINSLOW, LANIER & Co.**
 feb. 18. 1m.

To Railroad Engineers and Contractors.

WANTED, a corps of efficient Engineers and Contractors, for the construction of a Railroad in one of the Southern States. Apply to
DUFF GREEN.

New York, Feb. 14th, 1854.

**Ontario, Simcoe & Huron R.R.
CANADA.**

THIS road opened in May last to Lake Simcoe is expected to be completed to the Georgian Bay, Lake Huron a distance of 96 miles in June next where it will form the shortest and most agreeable route to the North Western States to Lake Michigan and to the Mineral Regions of Lake Superior.

At present the Passenger Trains leave Toronto for Barrie (64 miles) daily at 8 a.m. and 3.30 p.m., returning the same day. On the opening of the navigation a Steamer will ply on Lake Simcoe in connexion with the Trains and will convey passengers through that Lake and Lake Couchiching to Orillia whence a short portage of eighteen miles will take them to the waters of Lake Huron to the Steamer (Kaloolah) which runs to the Sault St. Marie and intermediate ports forming the most expeditious and agreeable route to the Mineral Regions of Lakes Huron and Superior.

Arrangements will be made on the completion of the road to the Georgian Bay for a line of first class Steamers to extend their trips to the ports on Lake Michigan.

ALFRED BRUNEL,
 Superintendent.

To Locomotive Engine Builders and Engineers.

THE Proprietors offer for rent for a term of years, with immediate possession, the splendid property, known as the **BELLEVILLE IRON WORKS**, situated on the Mississippi, directly opposite the City of New Orleans, and within 300 feet of the River, with which it is connected by fine wharves and landings.

The buildings are of brick, with slated roofs, and were erected in 1848 at a very heavy expense; are of a most substantial and durable character and admirably fitted for a Foundry and Machine Shops, or almost any mechanical business. They now contain a new and powerful Engine and Boiler and sufficient machinery, say, planing machines—lathes—boring machines, blacksmith's tools, &c., &c., to employ 100 mechanics, and could be put in working order in a few days. The Buildings cover a lot 300 feet square and are amply large to receive the necessary machinery for the use of 800 to 1000 workmen.

The terminus and depot of the New Orleans, Opelousas and Great Western Railroad is situated about 300 yards from the above property, which could be availed of to great advantage for the manufacture of Locomotives and Railroad work, generally as well as Steam Engines, Sugar Mills, and other descriptions of Machinery.

There are no Shops in New Orleans for the manufacture of Railroad Machinery, and as the Railroad Companies now organized in that city contemplate the construction of over 1000 miles of road,—a large part of which is already under contract,—the property now offered for lease offers a most eligible opportunity for parties desiring to contract to furnish the Engines and Machinery, for those roads. Responsible contractors with their works on the spot would have an advantage over Northern Workshops in contracting for the Work of the Railroads terminating in New Orleans.

The Establishment and prospect of remunerating work to be secured immediately are worthy the attention of manufacturers and Engineers generally.

Applications from responsible parties will be promptly attended to, and to satisfactory parties the proprietors of the Works can offer favorable terms and arrangements.

Letters may be addressed to

R. B. SUMNER,
 No. 61 Camp Street,
 New Orleans;

and further information may be had by applying to Messrs. **BARSTOW & POPE**, Pine Street, New York.

Railroad Spikes, Boiler Rivets, etc.

THE Subscribers, Agents for the sale of James S. Spencer's, Jr., Railroad and Boat Spikes, Boiler Rivets, and Wrought Iron Chairs for Railroads, made at his Works near this city, will execute all orders with promptness, despatch, and of the best quality.

ALSO IMPORTERS of English refined and Merchant bar Iron; Extra refined Car and Locomotive Axles (from 3 1/2 to 6 1/2 inches in diameter); B. O. Locomotive Tire (welded by Baldwin). Also, supply Boiler and Flue Iron cut to pattern or otherwise.—Spring, Shear, and Cast Steel, etc., etc.

T. & E. GEORGE.

Philadelphia, November 14, 1850.

Railroad Iron.

THE UNDERSIGNED, HAVING made arrangements abroad, are prepared to contract for the delivery of Foreign rails, of approved brands upon the most favorable terms.

They will also make contracts for American rails, made at their Trenton works, from Andover Iron, in whole or in part, as may be agreed upon.

They are prepared to furnish Telegraph, Spring and Market Wire; Braziers and Wire Rods; Rivets and Merchant Bars to order, all made exclusively from Andover Iron. The attention of parties who require iron of the very best quality for special purposes, is respectfully invited.

COOPER & HEWITT,
 17 Burling Slip, New York.

February 15, 1850.

Notice to Contractors.

CHIEF ENGINEER'S OFFICE,
 Norfolk, Va., Jan. 8, 1854.

SEALED PROPOSALS will be received by the Undersigned at this Office, from the 1st until the 20th day of March next, at sundown, for the "clearing" and "Graduation" on the line of the "Norfolk and Petersburg Railroad," between that portion of said road now under contract, and its terminus at Petersburg—covering a distance of about eighteen miles; also, for the "Culvert" and "Bridge" Masonry of the last section of said work.

At the same time, sealed proposals are invited for the "Abutment" Masonry of "Bridges" over the Eastern and Southern branches of Elizabeth River.

The work will be divided into sections of about three miles, and bids may be made for one or more of said sections.

The line, plan, profiles and quantities of work will be ready for examination on and after the 1st of March.

Specifications with forms of contract and proposal may be had of the undersigned after date.

Payments will be made in current funds during the progress of the work, in proportion of four-fifths of the amount due.

Of bidders personally unknown to the undersigned, evidence of their responsibility will be necessary; and of those to whom work shall be allotted, will be required bond and approved security in an amount not exceeding one-fifth of the amount of their contract, for the timely and faithful execution of the same.

The company reserves the right to accept such proposals as in their judgment will secure the prompt and faithful execution of the work according to contract, or to reject all if none are satisfactory.

The line is easy of access, the country through which it passes abundant in supplies and of a climate highly favorable for the prosecution of work at all seasons.

The work here offered for contract is of a character well worthy the consideration of the most responsible contractors.

W. MAHONE,
 Chief Engineer.

January 19.

Norfolk, Feb'y 10th, 1854.

Sealed proposals will be received between the dates mentioned in the above notice, for the construction of two Iron Bridges with stone abutments and piers, one over the Eastern Branch of the Elizabeth River, 630 feet long, and containing about 3,300 cubic yards of masonry, and the other over the Southern Branch of the same stream, about 400 feet long, and containing some 1,700 cubic yards of masonry. Plans of bridges, with quantities of material and working drawings, will be ready for inspection after the 1st March.

From this date proposals will be entertained for the Clearing and graduation of several sections not included in the 18 miles mentioned in the above notice, and also for the bridges and culvert masonry upon said sections,—of the former about 3,560 cubic yards, and the latter 670.

W. MAHONE,
 Chief Engineer N. & V. R. R.

Spikes, Spikes, Spikes.

ANY person wishing a simple and effective Spike Machine, or a number of them, may be supplied by addressing
J. W. FLACK, Troy, N. Y.
 or, **MOORE HARDAWAY, Richmond, Va.**
 March 6. 1850.

Railroad Iron.

THE Subscribers are at all times prepared to enter into contracts for Railroad Iron, of Messrs. Guest & Co., or other leading manufacturers' make, delivered free on board vessels in England or in this country.

Sept. 7.

BOORMAN, JOHNSTON & CO.,
 90 Broadway, New York.